MARCH, 1959

Commercial Fertilizer

and PLANT FOOD INDUSTRY

HOW TO TAKE THE PANIC OUT OF PRODUCTION

SEE PAGE 19

Advertisement of NITROGEN DIVISION, ALLIED CHEMICAL

Appearance may be improved through better design, sharper color printing, reproportioning, or better choice of outside wall.

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Commercial Fertilizer
and PLANT FOOD INDUSTRY

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Contents

Just Around the Corner, by *Vernon Mount* 8
Midwest Attracts 700 16
Shades of 1929 . . . thirty years ago this month 26
Across the Fence 30
Meetings 30
Ohio Sales School 32
Woltemath Advises Demonstrations 32
Honors 34
Industry Calendar 34
Around the Map 36
Changes 38
Obituaries 43
Materials Markets 44
Research Notes and Grants 47
Howell Heads Tax Committee 48
Equipment News Roundup 50
Information Service Card 57
Full Orbit Praised by Industry Men 55
Cooperative Member Figures 56
People in the Industry 58
SAFETY
Meeting Sets Up Objectives
Agrico Plants Win Awards
Fertilizer and Forests 66
Of this and that 68
Classified Advertising 70
Index to Advertisers 71

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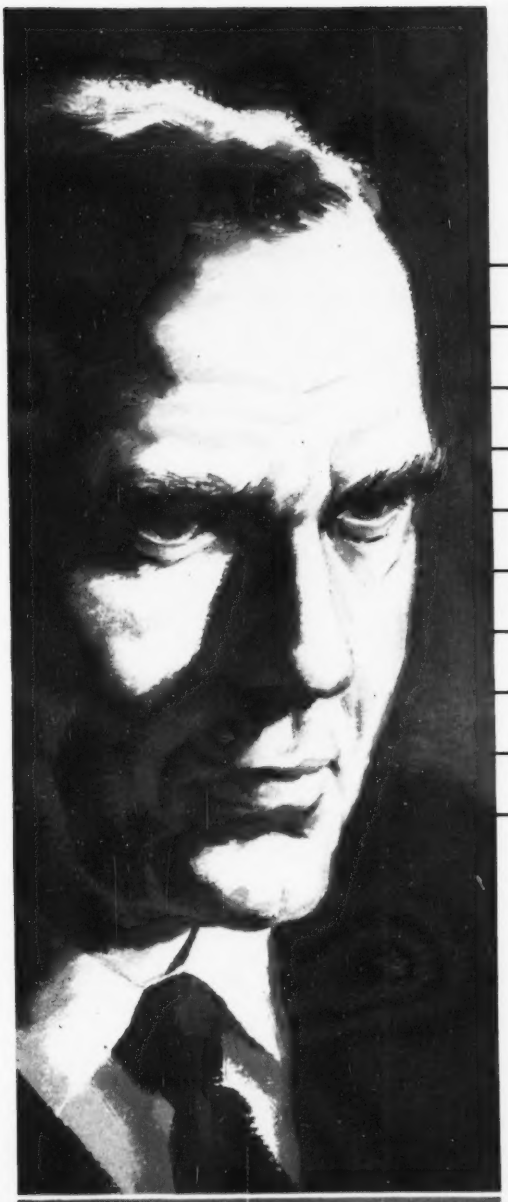
Commenting Freely

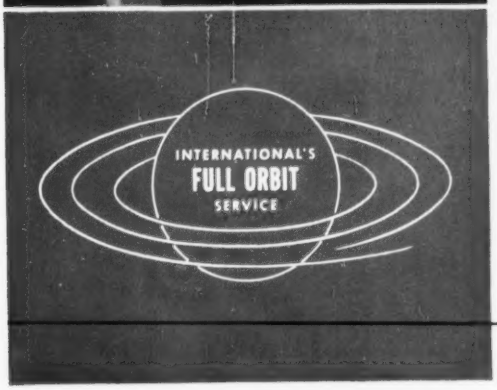
by BRUCE MORAN

"Study of an Imperfect Market" is the subtitle of a new book on the fertilizer industry, written by Jesse W. Markham, professor of economics, Princeton University. He is an outsider, looking in. He is rough on the industry. He is wrong about the need for some of the changes he advocates. But he does give all of us something to think about.

There are those who would wish some of his monopolist charges were true. All of us will agree that the farmer's buying practices are essentially inefficient, due to ignorance. And his belief that a positive policy of public relations is vital has long been understood by most of us, and has been the base for years of quiet work by the associations, and by enlightened suppliers.

You will be "all shook up" but it's worth reading. You can get Dr. Markham's book for $6 from the Vanderbilt University Press, Nashville 5, Tenn. The title is "The Fertilizer Industry".





DO YOU KNOW...

1. Where to get basic market data?
2. What makes a good salesman?
3. How to plan a sales contest?
4. How to guarantee farmer meeting attendance?
5. What meeting props work best?
6. How to allocate the advertising budget?
7. How to build dealer promotional programs?
8. Where to get agricultural movies?
9. How to set up a sound credit policy?
10. Where to get plant safety helps?

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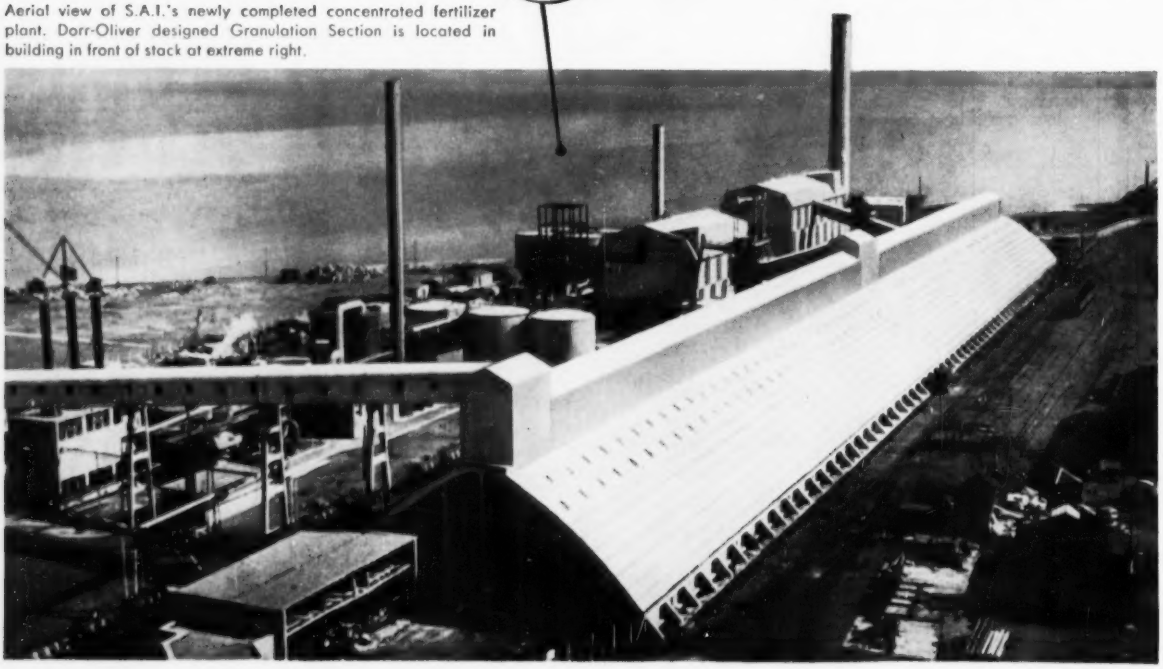
Aerial view of S.A.I.'s newly completed concentrated fertilizer plant. Dorr-Oliver designed Granulation Section is located in building in front of stack at extreme right.



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6-59

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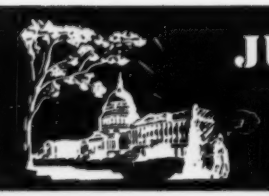

JUST AROUND THE CORNER

By Vernon Mount

THE BIG THREE in genuine, down-to-earth aid to the farmer are the Land Grant Colleges, the USDA and the County Agent system. The USDA budget of some seven billion looks big, and is easy to shoot at. The fact that about five billion of this is for support of the system which creates overhanging surpluses is often overlooked.

THE TWO BILLION spent by USDA for research, disease and pest control, market development, protection of soil, water and forest resources, may have some fat in it. But it is all pointing in the right direction.

IT TAKES GUTS for a politician to buck the support system, which now has the US owning or lending money on surplus commodities to the extent of nine billion. There would be very little immediate outcry if the research etc. functions of USDA were to be axed. But, unless the Land Grant Colleges were given funds to replace these functions—the outcry would soon be loud and plaintive.

IT IS TO BE HOPED that the Congress will think twice before cutting off any farm research functions. We still face that two hundred million population, due around 1965, which will need food. And only intelligent farmers, well-managed farms, and modern technology can do it.

Yours faithfully,

Vernon Mount

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A - You get the benefit of 84 years of practical fertilizer industry experience in each Sturtevant machine you buy. Unrivaled for fertilizer plant engineering know-how, Sturtevant originated the 'Unit' idea. Whether your need is for a replacement pulverizer or mixer, or a completely modern granulating unit, Sturtevant-engineered machinery always can be depended upon to fit your requirements like a glove.

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A - Clean-outs are a constantly recurring problem in the operation of a fertilizer plant. And minor repairs on hard-to-get-at machinery can consume hours of costly man and production time. Sturtevant's practical "Open-Door" design guarantees quick accessibility — for clean-outs and repairs. Any parts requiring cleaning or maintenance are quickly exposed by "One Man in One Minute".

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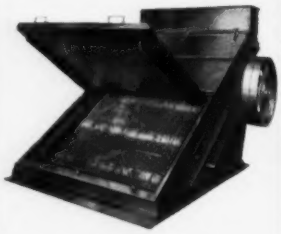
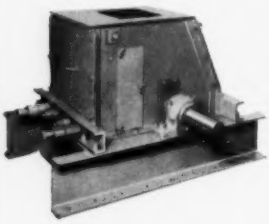
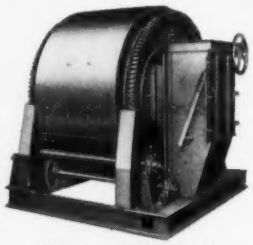


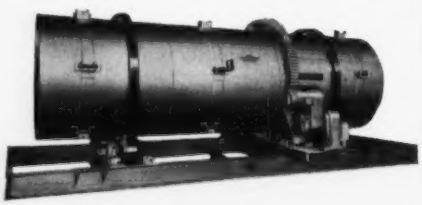
B-B SCREEN



ROTARY PULVERIZER



MIXER - AMMONIATOR



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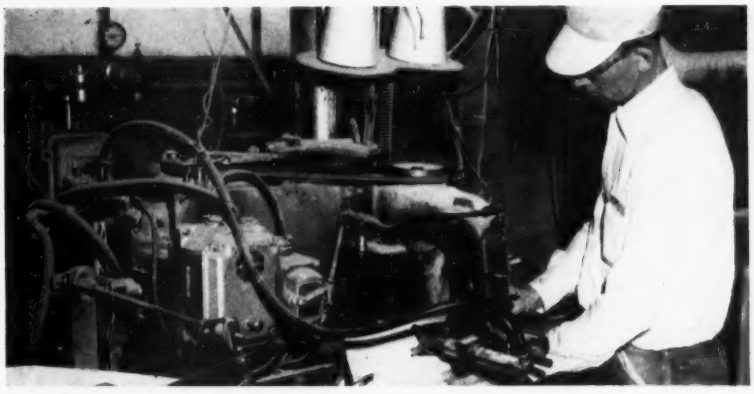

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mouth packing with ST. REGIS BAGS

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St. Regis PAPER COMPANY

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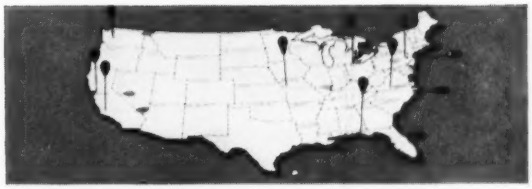

MONEY and time are saved for you by 8 conveniently-located St. Regis plants that make bags available when you want them.

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Three NPFI leaders: Richard E. Bennett, president; Zenas Beers, midWest regional director; Russell Coleman, executive vice-president.

700 Attend 11th Joint Meeting of MIDWESTERN COLLEGE AGRONOMISTS with FERTILIZER INDUSTRY

For eleven years, the midwest college agronomists have been meeting with representatives of the fertilizer industry, — and last month's meeting in Chicago drew more than 700. The program lined up 15 speakers, 10 of whom were agronomists from universities and USDA, the remainder being NPFI men, headed by President Richard E. Bennett, and Executive Vice President, Russell Coleman. W. P. Martin, Chairman Middle West Agronomists presided at the opening session on Thursday. The next day University of Missouri's George E. Smith presided.

An outstanding talk on Russia was delivered by **Louis B. Nelson,** USDA, who went to the USSR and brought back slides to show the group—and a very definite idea that Russia's agronomic program is bound to fail because it assumes that what works in one place must therefore work elsewhere—and at once becomes standard, required practice on all Russian farms.

Here are extracts from many of the talks given: **Dr. E. C. Doll,** University of Kentucky: Hay yields were boosted 5¾ tons per acre over a three-year period when legume-grass pastures received a heavy application of phosphate-potash fertilizer at seeding time and an annual top-dressing each spring.

Total hay yields were 9.3 tons per acre for the three years on the fertilized field, compared to 3.6 tons on a unfertilized check plot.

At seeding time the fertilized pasture received phosphate and potash at the rate of 120 pounds and 60 pounds per acre, respectively, Dr. Doll said. The annual spring top-dressing included fertilizer supplying 30 pounds of phosphate and 60 pounds of potash per acre.

Discussing the results of Kentucky forage research, Dr. Doll said the importance of proper fertilization at seeding time, "cannot be overemphasized."

"The success or failure of a seeding may be dependent upon the fertilizer treatment," he said, "particularly in areas where freezing and thawing results in considerable heaving.

"Even though a good stand is obtained, proper fertilization at the time of establishment may still affect yields, even though additional fertilizer is applied later."

Dr. Doll noted the value of annual maintenance applications of fertilizer in improving yields in individual years. A field that got both a heavy application at seeding time and annual maintenance applications, yielded half a ton more hay per acre in 1957 and nearly one ton more in 1958, than did a plot that received a heavy initial application of fertilizer, but no annual maintenance treatment.

Other test results indicate an excellent alfalfa response from phosphate, where needed, he said. He pointed out, also, that "ample potash is needed for good yields and to maintain a vigorous stand of alfalfa. In plots that had no potash, the stand of alfalfa was almost gone at the end of the third year," he reported.

Reported **Dr. Harold F. Rhoades,** University of Nebraska: wheat yields can be profitably increased by top-dressing the crop with nitrogen fertilizer. Various forms of nitrogen are equally effective.

Nebraska tests have indicated that spring or fall applications of ammonium nitrate for winter wheat have given similar average increases. A higher protein content for the grain has been generally obtained from spring applications, he said.

Dr. Rhoades reported also for the corn crop that fall and spring applications of nitrogen fertilizer have proved about equally effective in increasing yields on medium textured soils. On sandy soils, spring applications of nitrogen may be superior to fall additions for corn.

Farmers in the state could profitably use about twice as much nitrogen and about eight times more phosphate in the commercial fertilizers they apply than they are using at present, he told the meeting.

"Approximately 55 per cent of the estimated needs for nitrogen and only 12 per cent of the estimated needs for phosphate were used last year," he said.

Fertilizer use on Nebraska farms totaled 232,000 tons last year, an increase of 66,000 tons over the 1957 total. The 1958 fertilizer included 93,200 tons of nitrogen, 17,800 tons of phosphate and 1,300 tons of potash.

"Agronomists estimate that Nebraska farmers could use 170,000 tons of nitrogen and 150,000 tons of phosphate in commercial fertilizer annually," he said.

In Nebraska tests, sorghum yields have been increased as much as 27 bushels per acre when 80 pounds of nitrogen fertilizer was applied to fields that averaged 51 bushels with the use of nitrogen.

Alfalfa yields were increased nearly 2½ tons per acre when 160 pounds of phosphate per acre were added on sub-irrigated fields very low in available phosphate. Where the soil was medium to high in phosphate, only small increases or none at all, were obtained.

On non-irrigated fields in Eastern Nebraska, alfalfa yields were nearly doubled when 80 pounds of phosphate fertilizer was added to soil very low in available phosphate, Rhoades said.

Discussing research with minor elements, Dr. Rhoades reported that in zinc deficient fields, corn and field beans are severely affected.

CF STAFF PHOTOS

1. G. E. Garland, The Texas Co.,; W. B. Copeland, Olin-Mathieson Chemical Corp.
2. Phil Turner, E. I. Du Pont; E. D. Longnecker, Michigan State University.
3. Leroy Donald, Monsanto Chemical Co.; Ralph Fraser, Northern Chemical Industries.
4. Ted Doyle, National Potash Co.; K. R. Kurry, Phillips Chemical Co.; J. Van Rogers, Southwest Potash Corp.; Jerry Mitchell, National Potash Co.
5. H. H. Douthit, International Minerals & Chemical Corp.; Leo Orth and Ben Anderson, both with Sinclair Petrochemical Co.
6. Walter Sackett, The A. J. Sackett & Sons Co.; Ted Dolinski, American Cyanamid Co.; Joe Prosser and Bob Day, both with the A. J. Sackett & Sons Co.; Bob Farrow, Southern Nitrogen Co.
7. Frank Kennedy, U. S. Potash Co.; Phil Stocker, Land O' Lakes Creameries, Inc.; John Fletcher, U. S. Potash Co.
8. Chas. Stevens and Harry Smith, both with The Smith Agricultural Chemical Co.; John Guttay, National Plant Food Institute.
9. Cash Cahill, National Potash Co.; R. A. Faucher, Welcome Agricultural Chemical Co.; Bill Howe, Howe, Inc.
10. George Cosper, Sohio Chemical Co.; Marvin Luers, Jasper County Farm Bur. Coop.
11. Russell Pisle, Sohio Chemical Co.; George Urbanis, International Minerals & Chem. Corp.; Marshall Smith, The Smith Agricultural Chemical Co.
12. H. C. Huffman, Swift & Co.; Chuck Martin, International Minerals & Chemical Corp.
13. R. P. Thomas, International Minerals & Chemical Corp.; James A. Naftel, Pacific Coast Borax Co.; Gordon Cunningham, Tennessee Corp.
14. George Walton, Tennessee Corp.; Ralph Boynton, U. S. Potash Co.
15. Howard Peterson, Lincoln Service & Supply Co.; Leo Cronin, American Cyanamid Co.
16. Ray Pavlak, Dairyland Fertilizers; Tom Bruns, International Minerals & Chemical Corp.
17. John Zigler, International Minerals & Chemical Corp.; Bill Watmough, Davison Chemical Co.
18. Kaspar Peter, Phillips Chemical Co.; R. D. Martenet, E. Rauh & Sons Co.
19. Joe Sharp, Spencer Chemical Co.; Kirk Wagenseller, Swift & Co.

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*Trade Mark

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Corporation

61 BROADWAY • NEW YORK 6, N. Y.

Sorghum suffers less on the same fields. Sorghum, soybeans and field beans suffer noticeably from iron deficiency in scattered fields.

"Many farmers are applying fertilizer containing zinc at rates of 10 to 20 pounds per acre to correct zinc deficiency on lands that have been leveled for irrigation," he said.

Dr. Ralph A. Young, North Dakota Agricultural College: Well fertilized crops use soil moisture more efficiently to grow higher yields than do lower-producing crops on less fertile soil.

Dr. Young reported that wheat fertilized with both nitrogen and phosphate averaged 7.7 more bushels per acre than wheat receiving phosphate alone, or no fertilizer at all, in 29 field trials over a six-year period. Yet at harvest, the top five or six inches of well fertilized soil contained only six-tenths of an inch less moisture than did the low fertility plots.

Tests indicate that North Dakota farms have not been maintaining soil fertility sufficient for maximum yields, Young said.

Nitrogen is particularly deficient, except after fallow, he said.

Profitable response to phosphate fertilizer on small grains has been obtained in 80 per cent of field trials. Drill applications of concentrated superphosphate are superior to broadcast applications for small grains, he said.

Results of 90 phosphorus rate applications with small grains, indicate that 35 to 45 pounds of available phosphate should be used on soils testing very low, Dr. Young reported. On soils testing low, 25 to 35 pounds is advisable; and on soils testing medium, 15 to 25 pounds.

For corn, 20 to 40 pounds of available phosphate in a band along the row "appears to be a good recommendation," Young said. In favorable seasons, plowdown plus row application of phosphate is beneficial when the corn is properly fertilized with nitrogen and the plant population is about 16,000 stalks per acre.

Tests with both corn and small grains indicate there is little or no difference in the efficiency of nitrogen broadcast either in the fall or spring, Young reported.

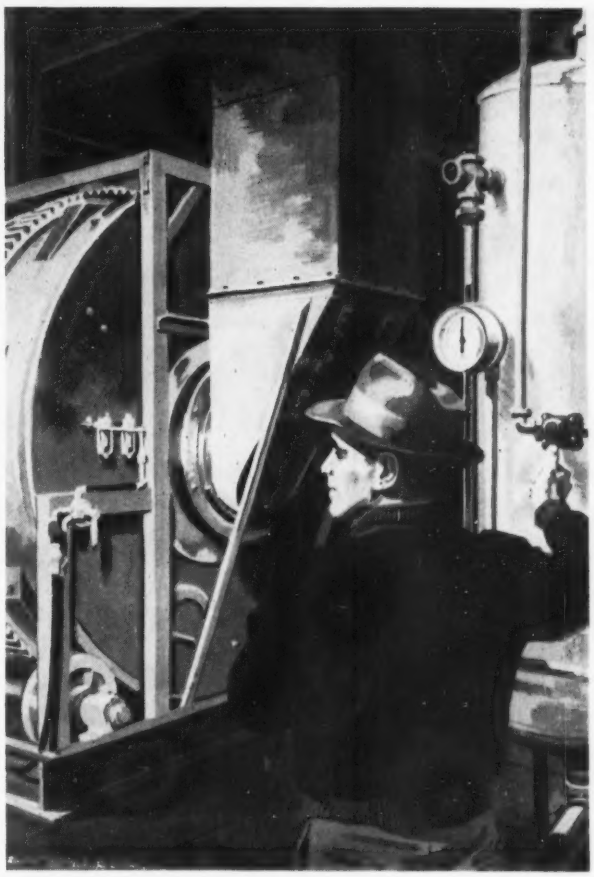
In flax fertilization, band replacement of moderate or heavier amounts of nitrogen separated from the seed is superior to placement with the seed, he said. Forty or more pounds in the row, separated from the seed, increased flax yields,

(Continued on page 23)

Arcadian® News

Volume 4 | For Manufacturers of Mixed Fertilizers | Number 3

HOW TO TAKE THE PANIC OUT OF PRODUCTION!



SUGGESTIONS TO HELP YOU:

- *Get tonnage out on time*
- *Hold the analysis*
- *Maintain top condition*

Making mixed fertilizer efficiently takes: a) thorough preparation, b) carefully supervised production. Invariably, the most successful producers are those who operate in accordance with these two basic principles—whether they make pulverized or granulated fertilizer.

Getting the Tonnage Out

One of the main reasons for inability to maintain tonnage schedules is "taking too long" to start up and shut down production. Producers should strive to come as close as possible to simultaneous operation of all controls that directly affect the processing of the product.

Another obstacle to getting tonnage out is *fluctuating* recycle. In fact, many tons per day can be added to the production pile by taking corrective measures at the first sign of fluctuation. For if fluctuations are allowed to continue, they usually lead to *uncontrolled* recycle, and the radical adjustments that can destroy the quality and quantity of production. If uncontrolled recycle develops it is wisest to dump some material rather than spend the day fighting the problem. However, be sure there is no change on analysis if much of any segment of the production is taken from the flow.

It is amazing how some producers will continue to lose tonnage simply because of inadequate equipment. For example, some operations have flowrators and other meters or measuring tanks that are too small to accommodate the quantities of nitrogen solution commonly used today. Such meters may have to be replaced with larger types, but in many cases they can be increased in capacity rather easily. It pays to see if the meter

manufacturer provides such a service before replacing with a larger meter.

It goes without saying, that with so many variables that can cause problems, the *least* the producer should have is up-to-date equipment in top condition, and a thorough knowledge of basic techniques. He will have enough to do just keeping up with preventive maintenance. One of his most important jobs is checking the air handling system. Any leaks here can seriously reduce the effectiveness of both dryers and coolers. Drying, compromised by faulty air systems, often causes poor granulation as well as poor drying, for some systems accomplish a big part of the granulation in the dryer.

Holding the Analysis

The practical limits for combining chemicals are valid only if equipment and techniques were originally sound, and have been protected against corrosion and abrasion. Equally important, they must have been protected against the added deterioration of operations that drift to the "easy way." For the "easy way" usually turns out to be the *wrong* way.

In terms of equipment: Failure to keep the upper and lower connections of gauge glasses on measuring tanks thoroughly cleaned by wire brushing and flushing with water has caused more faulty proportioning of nitrogen solutions than all other causes combined. "Creep" in the gauge glass immediately after the inlet or outlet valve is closed usually indicates that some gauge glass connection is choked. Connections that are above the liquid level can become fouled as well as those that are in contact with the nitrogen solutions. "Creep" can also come from leaking valves, in which case the "creep" continues until pressures are equalized. The "creep" caused by restricted gauge glass connections continues for varying lengths of time, according to the extent of the restriction and the rate of filling the measuring tank. In any case, there is always a lag in the levels between the tank and glass—both in filling and discharging.

Before a gauge glass becomes fully choked, the over-charging and discharging goes as high as 100 pounds per batch. However, the amount of overcharging for the first few batches after restriction of flow begins is too small to be important. Whatever it is it cannot be determined from the analysis of the pile of finished goods. For the inaccuracies started at practically zero and increased to as much as 2 units of nitrogen—with the increase becoming more rapid as flow failed completely. A representative sample could hardly be taken from the pile when the constantly increasing error may have been distributed over the contents of several tank cars.

In terms of technique: Distribution of dry materials and all liquids—*including acids*—in the mixer should be as uniform as possible—for this has direct bearing on the amount of nitrogen retained in the product. This holds for both pulverized and granulated fertilizer.

Water should not be used for flushing the flowrator in sulphuric acid service, for this can cause so much corrosion of the stainless steel float that great inaccuracies will occur.

It is well to remember that low analysis of goods and "shortages" of nitrogen solution, as well as pollution of the air, can be caused by excessive venting of storage and measuring tanks, and too-rapid or non-uniform introduction of the ammoniating media into the mixture. The ammonia gas that leaves the nitrogen solution in such a case is actually 82% nitrogen—forever lost to the fertilizer.

Some plants penalize their production unnecessarily by operating the equipment at less than capacity. Needless to say, it's more efficient to correct whatever condition is forcing this conservatism, so that production can attain full rated capacity at all levels.

Maintaining Top Condition

A sure way *not* to get good condition is to operate mixers and screens that are partially or nearly completely fouled by accumulated deposits. Fouling can be caused by poor distribution of liquids and dry ingredients in the mixer.

Rehandling pulverized fertilizer for drying and cooling after ammoniation at high rate aids condition. Producers should use the solution that needs high rates of ammoniation, especially if there is to be much cooling of the product. When aiming for minimum moisture in pulverized goods, it's best to use ingredients with low moisture content.

DO'S and DONT'S for Better Selling

DO plan ahead! Set a sales quota (a little higher than you think you can reach). Budget *enough* for pump priming: advertising, promotions, etc.

DON'T slight old accounts to develop new ones! Better to fatten up on the bird in hand than starve for the two in the bush.

DO take a personal interest in the customer's problems! It's *his* order—big or small—that interests him most.

DON'T talk price first! Talk profits! The customer is more interested in "get" than "give".

DO create desire for your product! Convince him he needs it—and you couldn't stop him from buying. Demonstrate product quality . . . underscore superiority—if any—over competition.

DON'T ever ignore a customer's complaint! It's better to hear harsh words than not to hear from him at all.

DO keep sales charts! Pinpoint sales trends—total and by accounts—so you can pin down the reasons why.

DON'T lose contact with your customers! Out of sight, out of mind . . . out of orders!

DO show genuine enthusiasm! Sell *yourself* on the product *first*—so customers will know what side *you're* on.

Arcadian News for Fertilizer Manufacturers . . . . . from NITROGEN DIVISION

"I picked 140 bushels of corn per acre following a single plow-down application of 14-7-7 fertilizer" is the profit-building story Julian Luebker tells fertilizer dealer Louis Frank. "In my opinion," says this Henry County, Ohio, farmer, "2-1-1 fertilizer ratios are tailor-made for continuous corn." Corn land like his is only one of many good markets for high-nitrogen 2-1-1 fertilizers.

Profits for Everybody in 2-1-1 Fertilizers!

Everybody wins with high-analysis 2-1-1 fertilizers. This fact is becoming evident to farmers and their agricultural advisors, as well as to fertilizer manufacturers and dealers everywhere. It is the reason why a number of manufacturers have already made the minor plant conversions necessary to make 14-7-7, 16-8-8 and 20-10-10 fertilizers.

To farmers, the success of high-nitrogen mixed fertilizers on major crops is proved in high yields, year after year, with a single, low-cost application each season of a 2-1-1 ratio fertilizer. This success is based on the fact that corn, grass, small grains, cotton and other major crops all consume twice as much nitrogen as phosphoric acid, and considerably more nitrogen than potash.

One of the most pressing needs of every farmer is to save all the labor he can, so as to keep costs down, so that his high yields will return more profit per acre. One application per season of a fertilizer that fulfills all the plant food needs of a crop is a sure work-saver, yield-builder and money-maker! Successful farmers are quick to see the value of these high-nitrogen mixed fertilizers. Now you can make them—and make money doing it.

Practical and Profitable

The technique for making these high-nitrogen grades at low cost is ready and waiting for you. Nitrogen Solutions developed by Allied Chemical research enable you to make 2-1-1 ratio fertilizers with modifications of your present equipment and processes. Because all the nitrogen for these fertilizers comes from Nitrogen Solutions, your cost per ton is low. At the same time, you can sell this extra nitrogen tonnage to greater advantage in mixed fertilizers than as straight nitrogen top-dressing. And by putting all the plant foods in one package, you don't risk the loss of part of the nitrogen sale in the form of nitrogen top-dressers. Once over the field does the whole job for the farmer. And one sale by your dealer sells all the plant food each acre needs and gets.

Hundreds of field demonstrations by farmers, dealers and county agents have shown the practical benefits of these high-nitrogen fertilizer grades. You will profit by encouraging your dealers to set up such field tests with the 2-1-1 fertilizers you manufacture. It will pay you to get all the facts on the benefits of making and selling 2-1-1 ratios. Write or call Nitrogen Division, Allied Chemical, 40 Rector Street, New York 6, N. Y.

New Research in Pine Forest Fertilization

How to make fertilizer application pay on pine forests is the aim of a new research study sponsored by Nitrogen Division at the North Carolina State College Department of Forest Management.

First aim of the work with loblolly pine, an important timber tree, is to determine the conditions under which it pays to use fertilizer. This involves finding the minimum amounts of nutrients a tree can have in its foliage without limiting growth, along with fertilizer applications in analyses based on soil and foliage tests.

The work is being done with pines growing on Piedmont and Coastal Plain soils, on forest sites of good, medium and poor quality.

CORRECTION

The sulfuric acid table on page 1 of the *Arcadian News, Volume 4, Number 1,* had one incorrect figure in it. This table should have read as follows:

SULFURIC ACID

Grade	Per Cent Acid	Per Cent Water	Pounds Reacting With 1 lb. Ammonia
60° BE	77.67	22.33	3.71
66° BE	93.19	6.81	3.09
	100.00	0	2.88*

*(For comparison—not used.)

If you keep file copies of the *Arcadian News,* we suggest that you make this correction. We trust that this typographical error caused you no inconvenience. Such things occasionally happen despite all precautions.

HERE'S THE BIG LINE OF Arcadian® NITROGEN SOLUTIONS

When you purchase your nitrogen requirements from Nitrogen Division, Allied Chemical, you have many different nitrogen solutions from which to select those best suited to your ammoniation methods and equipment. You are served by America's leading producer of the most complete line of nitrogen products on the market. You get formulation assistance and technical help on manufacturing problems from the Nitrogen Division technical service staff. You benefit from millions of tons of nitrogen experience and the enterprising research that originated and developed nitrogen solutions.

	CHEMICAL COMPOSITION %						PHYSICAL PROPERTIES		
	Total Nitrogen	Anhydrous Ammonia	Ammonium Nitrate	Urea	Water	Neutralizing Ammonia Per Unit of Total N (lbs.)	Approx. Sp. Grav. at 60°F	Approx. Vap. Press. at 104°F per Sq. In. Gauge	Approx. Temp. at Which Salt Begins to Crystallize °F
NITRANA®									
2	41.0	22.2	65.0	—	12.8	10.8	1.137	10	21
2M	44.0	23.8	69.8	—	6.4	10.8	1.147	18	15
3	41.0	26.3	55.5	—	18.2	12.8	1.079	17	-25
3M	44.0	28.0	60.0	—	12.0	12.7	1.083	25	-36
3MC	47.0	29.7	64.5	—	5.8	12.6	1.089	34	-30
4	37.0	16.6	66.8	—	16.6	8.9	1.184	1	56
4M	41.0	19.0	72.5	—	8.5	9.2	1.194	7	61
6	49.0	34.0	60.0	—	6.0	13.9	1.050	48	-52
7	45.0	25.3	69.2	—	5.5	11.2	1.134	22	1
URANA®									
6C	43.0	20.0	68.0	6.0	6.0	9.3	1.180	12	39
6M	44.0	22.0	66.0	6.0	6.0	10.0	1.158	17	14
10	44.4	24.5	56.0	10.0	9.5	11.0	1.114	22	-15
11	41.0	19.0	58.0	11.0	12.0	9.2	1.162	10	7
12	44.4	26.0	50.0	12.0	12.0	11.7	1.087	25	- 7
13	49.0	33.0	45.1	13.0	8.9	13.5	1.033	51	-17
15	44.0	28.0	40.0	15.0	17.0	12.7	1.052	29	1
U-A-S®									
A	45.4	36.8	—	32.5	30.7	16.2	0.932	57	16
B	45.3	30.6	—	43.1	26.3	13.5	0.978	48	46
Anhydrous Ammonia	82.2	99.9	—	—	—	24.3	0.618	211	-108

Other ARCADIAN® Products: URAN® and FERAN® Solutions • Ammonia Liquor • N-dure® A-N-L® • Ammonium Nitrate • UREA 45 • Nitrate of Soda • Sulphate of Ammonia

NITROGEN DIVISION

MAIN OFFICE: 40 RECTOR ST., NEW YORK 6, N. Y., PHONE HANOVER 2-7300

Allied Chemical

Hopewell, Va., P. O. Drawer 131 ..... Glenview 8-6301
Ironton, Ohio, P. O. Box 98 ..... Drexel 7-4366
Omaha 7, Neb., P. O. Box 166 ..... Bellevue 1464
Raleigh, N. C., 16 W. Martin St. ..... Temple 3-2801
Columbia 1, S. C., 1203 Gervais St. ..... Alpine 3-6676
Atlanta 3, Ga., 127 Peachtree St., N. E. Jackson 2-7805
Memphis 9, Tenn., 1929-B South 3rd St. Whitehall 8-2692
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St. Paul 14, Minn., 764 Vandalia St. ..... Midway 5-9141
San Francisco 4, Cal., 235 Montgomery St. Yukon 2-6840

(MIDWEST MEET *from page 18)*

whereas the same amount in the row with the seed reduced yields.

Dr. Young said that wheat or barley on well fertilized non-fallow outyielded grains on adequately fertilized fallow, in eight comparison tests.

In sugar beet trials, thick stands were essential for top yields when water and fertility levels were high, he reported. Nitrogen has given increased yields and higher sugar production in all cases, he said.

Dr. M. B. Russell, University of Illinois reported that heavy fertilization over the past four years has boosted corn yields nearly 100 bushels per acre on experimental fields cropped continuously to corn for 83 years on the Morrow Plots at Urbana.

He said these continuous corn plots had received no plant food until 1955. In that year one quarter of each plot was limed, and received nitrogen, phosphate and potash fertilizer.

The 1958 corn yield was 130 bushels per acre on the fertilized areas, compared to 32 bushels on the plots that had received no treatment over the 83-year period. Dr. Russell pointed out that this 130-bushel yield was the cumulative result of repeated fertilizer treatments since 1955.

"The plant food applications were sufficiently high to give reasonable assurance that lack of nutrients would not limit yields," he said. "It is not to be inferred that the rates actually used are recommended as 'practical' or 'economical.' ".

Other Illinois research indicates that soil management practices which boost crop yields, also increase the efficiency of water use.

Corn yields of 125 bushels per acre have been grown with only five to seven inches of moisture, by eliminating losses of water by evaporation, he said.

"Field studies on water use by corn and soybeans have shown that water stored in the subsoil plays a dominant role in meeting the midsummer need for crops."

"Summer rainfall and irrigation are very inefficiently used by crops because of high losses by evaporation. Of the 15 to 18 inches of water 'used' during the summer months, more than half is lost by evaporation.

"The total water lost from field corn during the growing season is largely independent of the corn stalk population and the fertility level. The efficiency of water use, therefore, is increased by those practices which increase the yields per acre."

Dr. Russell said that broadcast applications of equal amounts of liquid and dry fertilizers, respectively, gave "highly significant yield increases" in two out of three field experiments with corn in 1958.

Each type of fertilizer in a 12-6-6 grade was broadcast at rates of 800 and 1,600 pounds per acre, with and without the addition of a row application of 100 pounds of 6-18-0, also applied as a liquid or as a solid.

Dr. Russell said row applications of either liquid or dry fertilizer, had no effect on corn yield, when applied in addition to heavy amounts of broadcast fertilizer.

F. E. Hartzler, Kansas State Teachers College:

The fertilizer industry, like any other, must depend upon dealers to move their merchandise. This is of primary importance. It is not important that your dealers are small business. Three times as much merchandise is moved by firms having less than three employees as is moved by firms with more than fifty employees. As much merchandise is moved by firms with less than three employees as is moved by firms with more than a hundred employees. Small size, individual dealers will not prevent large volume sales.

The dealer's primary job is to separate the customer from the cash. The manufacturer may advertise, the college must do research and may recommend, but the dealer's job is to sell. To perform this function well, he must have knowledge —merchandising knowledge. This knowledge has to do with the art and science of merchandising.

Today I would like to talk about something that I do know and know well: how to train dealers. Let me give you an example: If you have fourteen thousand dollars and want to run a Western Auto Store, the Western Auto Organization will guarantee you ten per cent net if you will do exactly what they tell you to do. Western Auto has gone through the four stages of business development to reach the point that they can make this guarantee: One, the trial and error stage; Two, the setting of standards to measure business results; Three, the setting up of a standard operating procedures manual, and Four, a training program based on this manual.

The fertilizer industry has been in the trial and error stage for quite some time. You should be ready to make a study to determine the practices followed by your best dealers. With the information from this study, you will be ready to set up standards for measuring business results followed by a standard operating procedures manual and specific training programs. This, however, is ten years away.

Right now, you have some other and more basic chores to do. Your dealers need accounting training. They need it badly. In a recent training school for dealers I found that only ten per cent had ever had any accounting or bookkeeping. This is almost incredible. They need a good grounding in basic accounting. You need to set up a standard set of books that are simple and adequate for dealers. A successful dealer should do this—a very successful dealer with a sound knowledge of accounting.

You will also need a good basic sales school. Not one that is going to work miracles tomorrow, but one that will provide a sound simple guide to elementary sales management for your dealers.

The day of the quick pep talk is over in this business. You need some really hard solid training. Then your dealers will sell.

Dr. C. J. Overdahl, University of Minnesota: Corn yields go up when the plant population is increased on high-fertility soils that receive plant food treatments.

He based his statement on a study of results in the Minnesota X-Tra Yield, X-Tra Profit Corn Contest.

Overdahl said that corn yields averaged 117 bushels per acre over a six-year period when the population exceeded 18,000 plants per acre on fields that were fertilized. This was a 22.3-bushel increase compared with unfertilized check plots with the same plant population.

At a 14,000 to 16,000 plant population level, yields on fertilized fields averaged 102.1 bushels, compared to 89.1 on unfertilized plots, a 13-bushel increase. At 16,000 to 18,000 population levels, yields were 109 bushels on fertilized fields and 91.6 bushels on check plots — an 18.3-bushel gain.

Where the corn population ranged below 14,000 plants per acre, average yields on fertilized fields were 80.8 bushels, compared to 75 bushels on the check plots—an increase of only 5.8 bushels.

Dr. Overdahl reported that from 50 to 60 per cent of the farmers participating in the contest showed returns ranging from $10.31 to $16.37 per acre over cost of fertilizer.

"The contest was designed primarily to demonstrate yield increases through the proper use of fertilizer," he said. "A new phase of the contest, X-Tra Profit, was introduced in 1958, to place emphasis on crop producing efficiency."

Dr. George R. Blake, University of Minnesota: Modern research can help soil scientists predict the probable number of rainless days in a crop growing season in a given area, and thus estimate the crop response to fertilizer. The key to this development is increased knowledge of water storage in the soil, the movement of water and its use by crops.

Dr. Blake credited this breakthrough in knowledge to research over the years by scientists of the U. S. Department of Agriculture, Johns Hopkins University, the Rothamsted Experiment Station in England, the University of Tennessee, the T.V.A. and the University of Minnesota.

Recent research advances, he said, "have placed at our disposal important tools for incorporating simultaneously fertilizer and moisture factors into expected yield results.

"We now can quite accurately estimate from weather records the actual amount of moisture leaving the earth by evaporation and transpiration. By combining this with actual rainfall records and with runoff estimates, we can specify the level of soil moisture at a given time.

"We can also go back in time and re-analyze weather data and thus determine soil moisture conditions in past years and compare this data with cropping and yield histories and with fertilizer response."

Current researches are "just as important to agriculture as moon rocketry is to national security," he said.

In particular, he said, studies by Dr. W. L. Parks, of the University of Tennessee and J. L. Knetch, of T.V.A. have opened the way for relating drought probability to fertilizer response. These specialists have analyzed corn yields in Tennessee at several locations for eight years and have determined for that state, a three-way relationship between corn yields, nitrogen level and drought intensity.

Blake said that on the basis of studies he has made at Morris, Minnesota, the chances are that in one year out of 10 there will be 40 rainless days during the growing season in a soil that can store 9 inches of moisture at this station. With 7 inches of moisture, the probabilities are that one year out of two will have 20 to 30 rainless days from May through September. This number of drought days, he said, could cut the response to fertilizer by 25 per cent.

By combining information from a number of experiment stations, he said, "we can plot drought days for an entire state or area."

Blake emphasized that water is an important "Third dimension" when considering fertilizer and yield response.

"Water response must be understood by farmers just as good farmers today understand and use fertilizer," he said. "But there is an important interaction, for water is related not only to growth and yield, but to fertilizer uptake and use by crops."

State Agronomists' Suggested Minimum Fertilizer Grade Needs of the Middle West for the Year Beginning July 1, 1959*

Ratio	Illinois	Indiana	Iowa	Kansas	Kentucky	Michigan	Minnesota	Missouri	Nebraska	N. Dakota	Ohio	S. Dakota	Wisconsin
0:1:3	0-10-30	0-10-30				0-10-30	0-10-30	0-10-30			0-10-30		0-10-30
0:1:2	0-10-20	0-10-20	0-15-30		0-10-20	0-10-20							
0:1:1	0-20-20	0-20-20	0-20-20	0-20-20	0-20-20	0-20-20	0-20-20	0-20-20			0-20-20		0-20-20
0:2:1	0-20-10	0-20-10	0-20-10			0-20-10	0-20-10			0-20-10	0-20-10		0-30-15
1:6:3						4-24-12		4-24-12		4-24-12			
1:4:1						5-20- 5							
1:4:4	4-16-16	5-20-20	5-20-20	5-20-20	4-16-16	4-16-16	5-20-20		5-20-20		4-16-16		5-20-20
1:4:2	5-20-10	6-24-12	5-20-10			5-20-10	6-24-12		5-20-10		4-16- 8		6-24-12
1:3:9	3- 9-27	3- 9-27				3- 9-27		3- 9-27					3- 9-27
1:3:2					4-12- 8								
1:3:1				8-24- 8		8-24- 8		8-24- 8					
1:2:4			5-10-20			5-10-20	5-10-20						
1:2:3		5-10-15			5-10-15						5-10-15		
1:2:2		8-16-16	8-16-16		5-10-10	8-16-16	8-16-16	8-16-16			8-16-16		8-16-16
1:2:1			10-20-10	10-20-10		10-20-10	10-20-10	12-24-12	10-20-10	10-20-10		10-20-10	
1:1:3					6- 6-18								
1:1:1	10-10-10	12-12-12	10-10-10	12-12-12	10-10-10	10-10-10	12-12-12	10-10-10		10-10-10	10-10-10		10-10-10
1:8:0		5-40- 0											
1:4:0	8-32- 0	8-32- 0	8-32- 0	8-32- 0		8-32- 0	8-32- 0	8-32- 0	8-32- 0	8-32- 0	8-32- 0	8-32- 0	
1:2:0	10-20- 0		10-20- 0	10-20- 0		10-20- 0	10-20- 0	10-20- 0	10-20- 0	10-20- 0		10-20- 0	
1:1:0	15-15- 0		15-15- 0	15-15- 0			15-15- 0		15-15- 0	15-15- 0		15-15- 0	
2:1:2						20-10-20							
2:1:1	20-10-10	16- 8- 8	20-10-10			12- 6- 6					14- 7- 7		16- 8- 8
2:2:1						12-12- 6				12-12- 6		12-12- 6	
1:3:0				13-39- 0	8-24- 0		8-24- 0	8-24- 0	8-24- 0	13-39- 0		13-39- 0	
1:2:6													5-10-30
2:1:0			24-12- 0				24-12- 0			24-12- 0		24-12- 0	
4:1:2		16- 4- 8					16- 4- 8						

* The production of higher grades of the suggested ratios is encouraged. Solutions of similar ratios are equally acceptable.

The following changes in grades and ratios have been suggested for future consideration: 0-1-3 (0-10-30) to 0-1-4 (0-10-40); 1-3-9 (3-9-27) to 1-2-6 (5-10-30) or 1-2-8 (4-8-32)

1. Charles F. Martin, Miami Fertilizer Co.; Dr. Floyd Smith, Kansas State College, and C. Russell Martin, Miami Fertilizer Co.
2. Z. H. Beers, NPFI; Ward Lawler, Illinois Farm Supply Co., and R. G. Fitzgerald, Smith-Douglass Co.
3. Dr. Garth Volk, Ohio State University, and Dallas Cantwell, Southern Nitrogen Co.
4. Herb Garrard, American Potash Institute, and Chuck Trunkey, U. S. Industrial Chemical Co.
5. Kirk Wagenseller, Swift & Co.; G. W. Woodhull, Armour Corp., and John Zigler, International Minerals & Chemical Corp.
6. W. E. Smith, Swift & Co.; Joe Sharp and Ray White, Spencer Chemical Co.
7. Dr. C. J. Overdahl, U. of Minn.; Werner Nelson, American Potash Institute, and Dr. E. B. Norum, No. Dakota Agric. College.
8. Ward Lawler, Illinois Farm Supply Co.; Dr. G. E. Scarseth, American Farm Research Ass'n.; R. A. Garn, Farm Bureau Coop. Ass'n., and Lyman Shaw, Illinois Farm Supply Co.
9. Dr. M. D. Weldon, U. of Nebraska.
10. John A. Miller, Price Chemical Co.

Colorado Asks Teeth in Law

More than $78,000 in back license fees is owed the Colorado Agriculture Department, according to a legislative report that urges "sufficient penalties" in the agriculture licensing law to expedite collection of fees.

"Almost no difficulty is encountered in collecting fees where the law provides severe penalties," the report said.

In the Agriculture Department's fertilizer section alone, $16,284 is due for unpaid fees for over two years.

Department officials must now rely solely on an honor system of reporting by dealers, the report stated.

Arkansas PFES Recommendations

At their annual meeting at Fayetteville, Arkansas, the board of directors of the Arkansas Plant Food Educational Society made a recommendation to the State Plant Board that effective July 1, 1959, the minimum plant food nutrients per 100 pounds in mixed fertilizer for distribution in Arkansas be raised from the present minimum of 20 to a minimum of 24. This recommendation, if adopted, would mean that 6-12-6 would replace 5-10-5 as the minimum grade for the 1-2-1 ratio, and that 5-10-5 could no longer be sold.

Missouri Talks Tighter Regulation

The Missouri House Agricultural Committee has declared itself as ready to "do something" about State laws governing the manufacture and sale of fertilizers, according to a bulletin from Representative Charles B. James.

Delaware Bill Offers Fertilizer Law

Two representatives introduced in the Delaware legislature a bill to create a new fertilizer law to be administered by the State Board of Agriculture.

Virginia Issues Alfalfa Mixture Rule

The Virginia Department of Agriculture has issued an amendment to the regulations concerning fertilizer-pesticide mixtures issued September 12, 1959 for alfalfa.

Fertilizers Generally Meet Claims of Makers

Mixed fertilizers sold in Connecticut last year generally contained the percentage of plant-food elements guaranteed by manufacturers, The Connecticut Agricultural Experiment Station reports.

Ninety per cent of all guaranties made on 211 samples of commercial mixtures were substantially met or exceeded, according to H. J. Fisher, chemist in charge of fertilizer inspection and analysis.

North Carolina Rules On Magnesium Oxide

The North Carolina Department of Agriculture has decided the Commissioner may authorize the declaration of water soluble magnesium oxide, and set forth conditions under which it may be declared.

Fertilizer containing any type of insecticide mixture must satisfy the requirements of not only the Fertilizer Law but also the requirements of the North Carolina Insecticide, Fungicide and Rodenticide Act. The Insecticide Law prohibits the sale of bulk unlabeled materials.

In order to meet the immediate need that bulk fertilizer-heptachlor mixtures be allowed, the Commissioner of Agriculture has made tentative arrangements that the dealer's approved truck used for bulk distribution will be considered as a package. That all requirements of the law such as registrations, etc. be fully compiled with. That labeling be placed in the hands of the consumer upon delivery of the product.

This tentative arrangement will terminate July 1, 1959.

"We May Start Acting Like Business Men, Yet!!"

By W. Y. Foster, Jr.,

Hope Fertilizer Company

When Walter Brown told me he wanted me to write a piece for his magazine, telling how to make money in the fertilizer business, it gave me an awful shock. I said sadly to myself, "poor old Walter, he sure is slipping. He's losing his grip, and he's going to lose his circulation too, if he goes to putting things into COMMERCIAL FERTILIZER about making money in the fertilizer business, or any other subject as unpopular as that. He ought to know that the fertilizer business is not run for that purpose, and he ought to have a better sense of the requirements and ideas of his subscribers." I worried over it a lot, because I like Walter, and even if he is losing his marbles, I would hate to see him go off on any "new thought" stuff or wander into any blind trails.

Walter just doesn't understand how this game is played from a practical standpoint. These editors and literary folks always have their heads in the clouds, but we hard headed, practical fertilizer men know, of course that nobody wants to make money in the fertilizer business. That's not the idea at all. The idea in running a fertilizer business is to lose money every year and still stay in business. That's where the skill comes in. Given equal chances, the fertilizer man who can lose $100,000 a year, for, say 10 years and still stay in business, and still keep his stockholders and his banker's backing him, is a better fertilizer man than one who loses only $50,000 a year for 10 years, and is still going. Any dub can run a business and hold his job and his stockholders, and his financial backing, if he is showing a profit every year. A lot of credit is due the fertilizer men for what they have shown the business world in this new field of continuous losses coupled with continued operations. Not everybody can do it.

Of course, every practical fertilizer man knows all this, and I was surprised and shocked that Walter didn't know it, and would want to fly right in the face of this well established and unanimously endorsed policy by printing a fool article about how to make money in the fertilizer business. As I say, it worried me. Then it occurred to me that maybe Walter is planning to turn his magazine into a humorous publication, and this is his way of making a start. Maybe his idea is to have articles on the most ridiculous subject possible. Well in that case, of course, I am glad to help him out. The subject he gave me is funny enough, but it is still funnier to have a man from Arkansas try to tell the fertilizer folks how to make money, or anything else. So I thought, maybe old Walter is just deep and smart, instead of goofy, and I got a lot of comfort out of that.

In either case, the best thing to do is to humor him. If he is a few chips shy upstairs, the worst thing in the world would be to cross him in any way, and if he is trying to amuse and divert his readers, the least I can do is to play the string out like he says he wants it played.

So, I am going ahead, just as solemn as you please, telling some of my ideas of how to make money in the fertilizer business, just as though anybody wanted to know. Of course, my readers (if any) will quit me cold, but it makes me no difference. It's Walter's space that is being used up, and if he wants to waste it this way, why should I argue.

It is impossible, within the limits of an article like this, to discuss, or even mention all the factors influencing profitable operation of a fertilizer organization. Most of these features are well known and understood (though too often many of them are ignored or minimized) and to go into them would merely be threshing over old straw. Therefore, it is my intention to mention only a few points that seem to me of importance, yet are not receiving the attention they deserve.

First of all must come COST ACCOUNTING, and I refer to it in the correct meaning of the term. I don't mean this practice of fooling one's self that is indulged in so generally in all lines of business, and neither am I talking about guessing at costs. In the practice of medicine, it is well known that a correct diagnosis must be had before a cure can be effected, or even started. So it is in business, and that is just what cost accounting is,—a diagnosis. We must know where the money is going, how much of it is being spent needlessly, or unwisely, and where curtailment of expenditure can be made without doing injury. We must find what parts of our business are showing a profit, and what parts are showing a loss. An illustration.

For some time, in my own company, we have had a practice of analyzing each and every contract and order that is offered to us, placing each one on its own merits, and determining if it will make us a profit. I think this is not the general practice in the fertilizer business, though it is used quite extensively in other lines.

We know, of course, just what the materials for a ton of goods cost us in the factory. We also know what price we are going to get for the goods, delivered at destination. The difference between the c. a. f. cost of the materials in the factory, and the delivered selling price is the "spread" out of which we have to take care of all expenses of every kind, bags, freight to destination, and every thing else. Also, profit, if any must come out of this spread. We make these figures on each article listed in the order, and see how we will come out on each one separately. Then we sum up the order as a whole. It may be that some articles in the order will show a loss, but on the remainder of the order there is enough profit to make the order as a whole, acceptable. Or, taken as a whole, it may show a loss, in which case we decline it.

This matter of analyzing orders is capable of many phases and modifications, all of which must be studied and duly considered. Common sense must be used. For example, we may get an order for a car of goods, and it figures out a loss. Yet, it is from a good customer, who is giving us a good volume of business, and we know that his business for the season will show a profit. In such a case, it is only good business to fill the order, and do so cheerfully.

Understand, I am not referring to goods sold at cut prices. But such an analysis as I speak of will often show that orders taken at full list prices show a loss, and it would be better to decline them. As I write, I have before me, one of our cost sheets showing the c. a. f. factory cost of the materials necessary to make and every article on our price list. This list also shows the delivered selling price, and the difference between the two, which is the "spread" referred to above. This cost sheet shows that the spread on some of the brands is less than half what it is on others, and the others range all along between the highest and the lowest. Manifestly, if we receive an order calling for only those brands showing the small spreads, we are going to lose money on that order, unless there is some other marked factor to the contrary.

We have cases also, about as follows. We receive two orders, calling for just about the same brands. One goes out on a freight rate of, say $1.20 per ton. The other moves on a freight rate of, say $4.80 per ton. Our analysis shows a profit of say $2 per ton on the first mentioned order. We accept it, and decline the other, for very plainly, there is a loss to us on the order carrying the $4.80 freight rate.

We have found, long ago, that a fertilizer company cannot ship its goods all over the earth, on delivered prices, and we have also quit this practice of blindly accepting every order tendered us. It is my opinion that others will quit it in time.

As of course we all know, there has been, within the past few years, a distinct awakening among fertilizer men, to the fact that it is vitally necessary that methods and trade practices must be put on a higher plane if the industry is ever to know any success. Earnest efforts have been made to bring this about. It is strange that such a meritorious and sane movement has not met with more success. One is disposed to wonder why. I think I know one of the main causes why this reformation has not been more successful. The men who have realized this need for improvement, are the best minds in the industry. They have given a great deal of time, work, ability and constructive thought toward better things for their own business and the fertilizer business as a whole. But, though their vision is keen and accurate and far seeing, it seems that this progressive and constructive policy is confined to themselves. It has never been put over in a general way throughout the industry. We see a peculiar and astonishing thing. Mr. Soandso, the head of his fertilizer organization is untiring in his efforts to put his company and the industry as a whole on a better basis, and at the same time Mr. Soandso's division managers and salesmen are running along in the same old cut throat groove, getting away with murder, and seem to have no conception of what the heads of their own company are making an effort to stand for in the way of improved business methods. And when we come to think of it, the men who really create trade practices and company policies are the men who are in direct contact with the customers,—the men on the firing line.

Of course the fertilizer dealer is a price hound. It is his job to be, and we can't blame him for that. And the majority of salesmen in all lines side with their customers against the firms they represent. The dealer starts his "whispering campaign" with the salesman. According to the dealer, his competitor who handles the goods of another fertilizer company, is getting a price concession. The salesman is impressed and scared. He carries the story, with embellishments, on to his district sales manager. From him, it goes on up the line, gaining with each repetition in subtle suggestions of loss of "tonnage" and distrust of competition. When it finally gets to the "front office" it has assumed such proportions that in a very great many cases, it causes a weakening of morale, and an actual modification of the original profit making, constructive policies that the heads of the business had planned to pursue. It is a pity, and a regrettable source of loss, that the ideas and ideals of the big men of the industry are not better understood and better carried out in their own organizations. Any man can carry out a policy better if he understands it. I can see a real need for a campaign of education, starting right at the heads of the fertilizer firms, and extending on down throughout the organizations, to the salesmen themselves.

Close your office door, leave word you are "in conference," put your feet on your desk, light a cigar and read this article.

It is the most unusual thing we have ever had the pleasure of publishing, and, in our opinion, one of the best articles ever submitted.

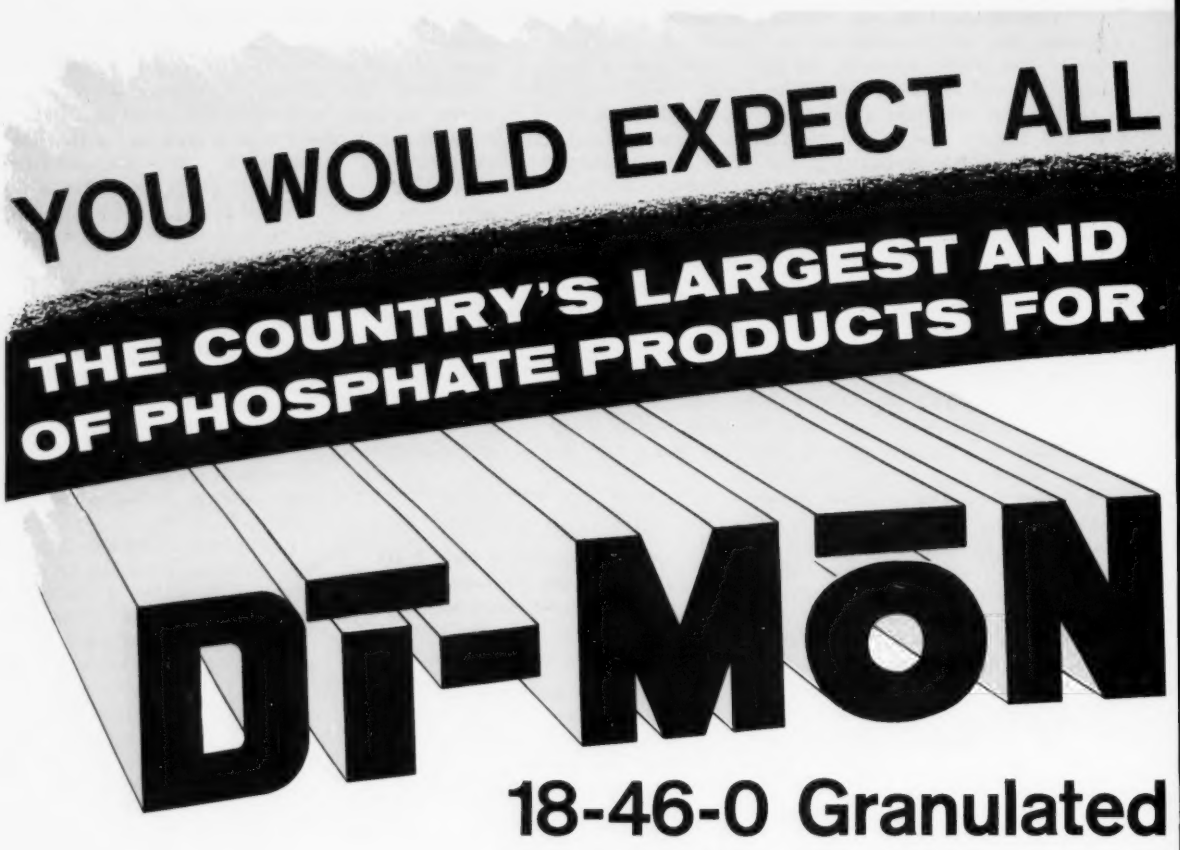
We commend it to you for the laughs it will give you and for the thoughts it will make you have.—The Editor.

I have touched on only a few points that I see are effecting profits in the fertilizer business. I could mention many others, but COMMERCIAL FERTILIZER would not and could not print all I could write, unless the magazine went out by freight instead of by mail. You know, that's one of the fascinating things about this fertilizer business. You don't make any money, but you do get lots of ideas. So now for my graceful closing.

I know we have as fine a bunch of men in the fertilizer industry as can be found in any business in the United States or elsewhere. Believe it or not, that's a sincere statement. We may not be very good business men, but we sure are good folks. And the cheerful thought is that we are fast learning to be good business men. It looks to me as though some time in the future, —and not so far off, a man who owns stock in a fertilizer company might begin to look upon it with some esteem. We fertilizer people were slow starters, but we may look awfully good coming down the stretch. Almost every day, I see fertilizer men adopting methods that have been used as profit makers in other lines of business. We may start acting like real business men yet. Won't that be a happy day? And won't it be a grand and glorious feeling when a fertilizer man can walk into his banker's office, and they will invite him right in, and he will feel at home, and he can sit down without fearing that they are going to ask him to cross his wrists so the bracelets can be conveniently fitted? This is coming sooner or later. I think we can believe it will be sooner than later.

Did you notice the date?

This charming bit of writing is 30 years old this month - - - and still good!



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Acid of highest purity to assist you in reducing formulation cost and maintaining consistent, uniform high quality in all your phosphate processing.

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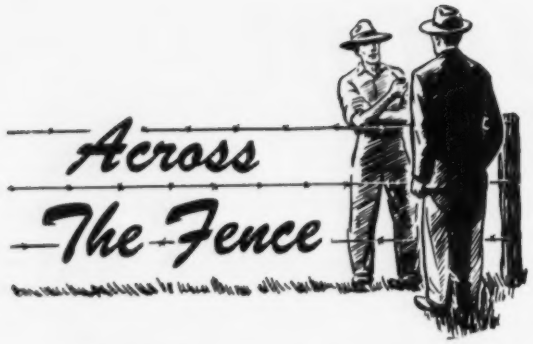

research facts to help you sell

A farmer in South Carolina named T. R. Pender, who has a right to pontificate because he has done an outstanding job, says **farmers should spend more time on their good land, and fish during the time they ordinarily devote to poor land.**

He grows peanuts, and last season took $10,000 from 72 acres. Clemson's Plant Pathologist, Fred H. Smith says the reason is that Mr. Pender is never afraid to try out new ideas in the management of his land and his crops. While surrounding acreage was heavily infested with nematodes and Southern blight, for example, County Agent John B. Griffith says Mr. Pender had almost complete control by applying fungicide when the plants were in bloom, while it was robbing neighbors of a part of their crop.

33 other farmers in the area show a significant increase in yield. Perhaps the example of Mr. Pender has paid off.

Fewer acres and better fertilizer is better seems to be the slogan in South Carolina. Another farmer there, who this time grows coastal bermuda took 17 tons in 2 cuttings off six acres. In addition, he grazed 30 head of cattle 15 days in the Spring and 45 days in the Fall. This is H. O. Smith, who used 1,000 pounds of 20.5% N, split in three applications. Mr. Smith won a fine watch in the Piedmont District Green Pastures Contest.

You will note both these gentlemen, and many other we could name, work closely with their good friends the county agent and the Experiment Station.

meetings

CFA Sets November Date

The California Fertilizer Association has announced that its thirty-sixth annual convention will be held November 9-11, 1959, at the Fairmont Hotel, on Nob Hill, in San Francisco. 600 are expected to attend from the United States, Canada, and Mexico, according to Howard H. Hawkins, association president.

Thomas Fleischman of St. Regis Paper Company, San Francisco, is chairman of the convention program committee. Serving with him are Harold E. Ferguson, Balfour, Guthrie & Co., Limited; William Jaqua, California Spray-Chemical Corporation, Richmond; Robert Mussetter, Rocca-Cuvi, Inc., San Francisco; and Donald L. Watts, Garden Valley Fertilizer Company, San Jose.

The Entertainment Committee is composed of Robert E. Segerdell, Chairman, Hercules Powder Company, San Francisco; Alden C. Carey, Sunland Industries, Inc., Stockton; and Robert E. Minahan, Crown-Zellerbach Corporation, San Francisco.

Mrs. A. L. Diebolt, Los Altos, is Chairman of the Ladies Committee, and she is being assisted by Mrs. D. W. Galbraith, Woodland, and Mrs. Mordy S. Rose, Salinas.

CFA Soil Group Meets June 29-30

The Soil Improvement Committee of the California Fertilizer Association has announced plans for the seventh annual California Fertilizer Conference to be held June 29, 30 on the campus of the University of California, Davis. Some 300 people interested in plant nutrition are expected to attend this year's program according to J. H. Nelson and Earl R. Mog both of Stockton, Co-chairman of the conference.

Fertilizer placement will receive major emphasis on this year's program. In addition, considerable attention will be given to recent developments in tree and vine fruit nutrition according to the committee, which urges all persons concerned with these aspects of plant nutrition to attend. No registration fee will be charged.

Kentucky Conference Lexington, July 29

The 1959 Annual Kentucky Fertilizer Conference is scheduled for Wednesday, July 29, 1959, at the Guignol Theater, University of Kentucky Campus, Lexington.

NAC Meets October 21-23

The 26th annual meeting of the National Agricultural Chemicals Association will be held at the French Lick-Sheraton Hotel, French Lick, Indiana, October 21, 22, 23, 1959, it was announced by Lea S. Hitchner, Executive Secretary of the association.

Further details of the meeting will be made known as soon as they have been completed.

Pacific Committees Appointed

President Ray Whitcomb of Pacific Northwest Plant Food Association has announced appointment of the following committees:

WASHINGTON: **Legislative:** M. G. Wolfkill, Chairman; Dick South, Art Burkette, Lionel Neff and Robert Inkpen. **Scholarship:** John Thomas, Chairman; Sid Martin, Ross Hansen. OREGON: **Legislative:** Wm. Duncan, Chairman; Don Burlingham, Frank Meeker, Fenn Emerson, Alec Runciman. **Scholarship:** Lee Hansen, Chairman; Jack Johnston, Gene Kokko, Gale P. Goyins. IDAHO: **Legislative:** Ben McCollum, Chairman; Roscoe Williams. **Scholarship:** Roscoe Williams, Chairman; Joe McCollum, Tony Kamel.

CONVENTION

General Chairman: Jack McConkey. **Program:** Don McClintock, Chairman; Art Burkette, Frank Taylor, Bob Goldberg, Henning Waltersdorph, Karl Baur; **Entertainment-Banquet:** Harold Lowe, Chairman; Warren Marshall, Sid Martin, John Thomas. **Ladies Entertainment:** Millicent Whitcomb, Chairman. **Registration:** Keith Henson, Chairman. **Golf:** Ed Wyatt, Chairman. **Bowling:** Bill Gable.

In four years the use of liquid fertilizer has grown from zero to about 5% of all fertilizer applied in Minnesota.

Offer your customers an agronomically superior fertilizer with long-feeding, insoluble nitrogen

Use Du Pont UAL-37

Growers in recent years have shown an ever-increasing interest in fertilizers that furnish slower-acting, long-feeding nitrogen. They know the value of nitrogen that nourishes plants at the rate required for maximum growth and yields—that resists leaching and remains in the root zone where plants readily absorb it.

Du Pont UAL-37 furnishes nitrogen in three forms—ammonia, soluble organic (urea), and insoluble organic. One-fifth of the nitrogen is the insoluble portion. It's of proven high agronomic value, particularly for long-season crops and grasses.

The insoluble nitrogen supplied in UAL-37 is long-feeding, of the ureaform type. Its continuous rate of nitrification yields available plant food long after soluble forms have been exhausted.

Take advantage of the growing trend toward long-feeding fertilizer materials with UAL-37. Du Pont specialists can give you at-the-plant advice, and stand ready to assist you in profitably formulating mixtures containing UAL-37. For further information on UAL-37, fill out and mail the coupon.

HERE ARE OTHER IMPORTANT ADVANTAGES OF DU PONT UAL-37

- Produces mixed goods of outstanding physical properties, because the ureaform in the mixture has a specific conditioning effect.
- Safe in granulation . . . no danger of flash fires and less stack. Gives firm, uniform, stable granules, best for storage and application.
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- Gives mixed goods better "feel"—minimizes caking, segregation, and dusting.
- Won't corrode regular fertilizer manufacturing equipment, including ordinary steel and aluminum.
- Prompt, dependable delivery enables you to schedule your production with confidence.

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OHIO SALES SCHOOL SETS NEEDED TRAINING PATTERN

A test was made last month of a long-needed school for fertilizer salesmen. Meeting in Ohio a group of 180 went through an all day session crammed with useful facts and methods for getting more fertilizer business. Sponsored by NPFI, the curriculum was planned jointly by them with Ohio State furnishing local data and Empire Sales Training setting up the basic educational methods.

The morning sessions, after formal greetings and keynoting by Garth Volk and Russell Coleman, began with an Empire film strip "Step 1" entitled Profitable Plant Food Sales. Moyle Williams then talked on "What's the customer like?"

Mr. Williams' theme may be summed up in these briefs: Farmers are looking for ways to increase production, cut costs, increase profits. There are many other people competing for the customer's dollars—machinery, buildings, labor, cars, refrigerators and so on.

Farmers, he said, don't want fertilizer. They want what fertilizer can help them get. They are expert at raising objections, and many have to see to believe. After a fine discourse along these lines, Mr. Williams got into data on the type of farming and of farmers in Ohio.

This led to the Empire filmstrip #2, a further treatise on selling the farmer.

After a coffee break, four men formed a panel discussing the broad subject of Why Does the Customer Need our Product? Zenas Beers, Raoul Allstetter, Moyle Williams and John R. Guttay all spoke to this point.

Lunch was followed by filmstrip #3 and a group of speakers covered the broad subject of Some Available Selling Tools. Werner Nelson on soil testing; John R. Guttay on Ohio State recommendations; Zenas Beers on production potentials by crops, by areas; and Arlan Woltemath on the use of demonstrations.

After the #4 filmstrip was shown, O. E. Anderson talked on Selling Fertilizer in Ohio.

The experiment was hailed as a huge success, and one that should be repeated in other parts of the nation.

Salesman's Manual

At the Ohio Fertilizer Sales School, the new NPFI Fertilizer Salesman's Handbook was introduced and tested on a practical working basis. As Russell Coleman said at the time, this is the first pocket-sized, authentic reference book on fertilizer.

Prepared with the help of outstanding experts from the industry and the colleges, NPFI feels it will become the "bible" of fertilizer information. Chapter headings will suggest why: Knowing your customer. Knowing your product. Principles of Fertilizer Economics. Facts and Figures. Terms and definitions. Sources of Information and other Aids to Selling.

The 220 page manuals, with plastic loose-leaf binding, will permit replacements and revisions. This arrangement also permits removal of data not pertinent to the salesman's working area. The manuals are on sale by NPFI at $1.50 each, singly or in quantities, postpaid.

DEMONSTRATIONS ADVISED IN OHIO SCHOOL TALK

by Arlan Woltemath, *NPFI*

Most salesmen know a good bit about fertilizer demonstrations. The chances are all of you have seen good demonstrations, so-so demonstrations, and demonstrations that everyone would have been better off without. Most fertilizer salesmen have been urged time and again to take farmers, bankers and others out to see demonstrations and to use demonstrations as a means of selling. Thus, it is an old subject to many of us and a few may think it is pretty well worn out. Nevertheless, it might be useful for us as fertilizer salesmen to sum up what we do know about demonstrations in hopes that we may get some guidance for the future.

1. The National Analysts' survey on "Farmers' Attitudes Toward the Use of Fertilizer," brought out some very interesting points about fertilizer demonstrations, which are as follows:

(a) 76% of Midwestern farmers approve of fertilizer demonstrations and believe they are beneficial and would be helpful in influencing farmers' fertilizer practice.

(b) However, a relatively small percentage visit demonstrations. Only 25% said that they had "ever visited . . . a demonstration plot." Furthermore, 62% of Midwestern farmers state that they do not even "recall reading about fertilizer demonstration plots."

(c) However, there is reason to believe that those who do visit fertilizer demonstrations are substantially influenced by them. Some 18% of Midwestern farmers indicated that experimentation and demonstrations had been the means by which they had found out what nutrients their crops needed.

2. Anyone who plans to put out fertilizer demonstrations should know what he is doing and be willing to spend the necessary time to get it done right. A poor demonstration is worse than no demonstration at all. Some pitfalls are germination injury, insufficient plant population, stimulation of weeds, and so forth.

3. Farmers are more impressed by fertilizer demonstrations on average or poor farms than those on the best farms.

4. Since a major problem is that not enough farmers see demonstrations, it is obvious that the plots will be more effective if they are easily viewed from a well travelled road and are as accessible as possible.

5. Selling with demonstrations is essentially advance selling, except, possibly, in the case of hay and pasture crops. For instance, if you take a farmer out to a demonstration plot on corn this summer, you probably won't benefit from that until next year; and the farmer, though impressed at the time he saw the plot, may later have more or less forgotten what it showed. The problem is how to "keep the picture alive" until fertilizer selling time. Perhaps a colored picture taken during the growing season when the contrast was sharpest would be helpful when following up with the farmer at the time he is ready to buy his fertilizer. Also, of course, data on yields, profits, and so forth, as mentioned below, can help the follow-up.

6. A cardinal rule is that demonstrations should not be labeled or publicized until it is certain that

they have been carried out right AND until a visual contrast shows up. Sometimes, even though the demonstration is successful and results in more profitable yields, there won't be much visual contrast. In such case, there is no use in encouraging visitors before harvest.

7. The payoff lies in the yield difference and whether or not it is profitable to fertilize at high rates. This can be demonstrated with bushel baskets, dollar signs, and so forth. In some cases it may be possible to calculate and publicize how much additional profit would have come from fertilizing 40 acres or some other sizable field at the recommended rate.

8. A common defect in demonstration programs is a failure to publicize. Publicity can start as soon as contrast shows up. Pictures, of course, are important in this connection. The payoff story, perhaps the most effective story, is the one which is written after all the results are in and the economics have been worked out. One way to get publicity is to give proper recognition to the demonstrator for his cooperation and to others who are responsible for its success. Another way to stimulate interest is to use colored slides or black and white pictures for (1) displays in extension offices, (2) displays in business establishments or dealer offices, (3) meetings, (4) TV programs, (5) newspapers, and so forth.

9. The key point of a successful demonstration is that it be laid out, labeled (after contrast shows up), and publicized, **so that the farmer can get some concrete guidance for himself.** For this reason, as well as for guidance to the person putting out the plot, it is usually desirable to have the soil tested in advance even though the rates of fertilization may, on some of the plots, exceed the soil test recommendations.

The above may provide a checklist which will be helpful for use in connection with demonstrations. Some of you may be in a position to influence and assist the local agricultural authorities who are putting on demonstrations, and no doubt they will welcome your help. Perhaps you are close to the local newspaper and can stimulate publicity. Then again, some of you may want to put out demonstrations of your own. In this connection, I would like to refer you not only to the Extension Service but also to Section 213 of the Fertilizer Salesman's Handbook, which gives rather detailed instructions on laying out plots, harvesting, checking and comparing results, and so forth.

In the final analysis, the desirability of using demonstrations in selling fertilizer will depend upon your own local situation. You are the best judge of that. It is my opinion, however, that most salesmen and most dealers can benefit substantially from properly run fertilizer demonstrations.

Correction

Our February article, page 25, entitled "Iowa Farm Supply licks dust problem," contained two errors: salvageable material from dryer exhaust gases amounted to about 1800 hourly pounds, and were routed back to the ammoniator, not to bagging as stated. Recovery of solid "fines" is also not bagged as is, but is reformulated into a finished granular product. IFS' Sidney Bondurant corrected the printer's copy we sent him on the story but Uncle Sam didn't get it to us before presstime.

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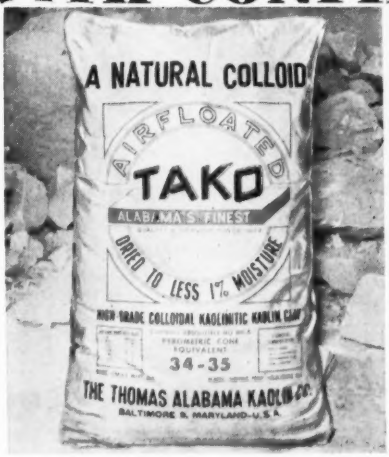
"TAKO" Natural High Grade Pure Colloidal Kaolinitic Kaolin Crude from our very extensive deposits is processed by neither adding to nor taking away any of its very desirable properties. Its colloidal properties give increased workability in formulations and its purity is highly desirable due to its compatibility with chemicals.

"TAKO" Airfloated Colloidal Kaolinitic Kaolin is a natural exclusive product —a practically pure inert colloid with exceptional qualities—contains absolutely no mica—practically chemically pure.



"TAKO" Excellent adhesive-absorption qualities—excels in formulations of insecticides—pesticides — inert colloidal properties increase toxic action—give increased workability — dispersion — free flowing from all types of dusting equipment—absolute minimum drifting.

MICRON SIZE

MINUS 1	MICRON	55%
" 2	"	68%
" 5	"	85%

NO MICA — NO ALKALIES
AIRFLOATED — BAGGED OR BULK
Guaranteed Less 1% Free Moisture

DEPENDABLE

PROMPT SERVICE

QUALITY & SERVICE SINCE 1939

Non-abrasive • ***Non-hygroscopic*** • ***Non-caking*** • ***Free-flowing***

"TAKO" **is produced under complete laboratory control. Large tonnage used by the insecticide-pesticide, fertilizer, chemical, & other large industries.**

THE THOMAS ALABAMA KAOLIN COMPANY

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INVESTIGATE *"TAKO"* FOR YOUR REQUIREMENTS

"Confidentially, the men who know the most about production equipment... buy Sackett"

GET THE RIGHT ANSWER TO YOUR PRODUCTION PROBLEMS get Sackett

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HONORS

Walter S. Colvin, left, director of agricultural sales for Nitrogen Division, Allied Chemical Corporation, New York, N. Y., receives the National Fertilizer Solutions Association's Award of Merit from E. E. Crouse, right, C. D. Liquid Fertilizer Corporation, Liberty, Indiana, a former president of the Association

Walter S. Colvin, sales director for **Nitrogen Division,** has been given the Award of Merit by the **National Fertilizer Solutions Association.** First to receive this award, Mr. Colvin was cited for his aid to the formation of the association, for his field tests of nitrogen solutions, and for his educational work among farmers. He is shown here, left, receiving the award from **E. E. Crouse, C. D. Liquid Fertilizer Corp.,** a former president of the association.

* * *

Two internationally-known agricultural scientists — both University of Minnesota alumni—have received the University's **Outstanding Achievement Award.**

The honored men were **Thorvaldur Johnson,** chief of the **Canadian Department of Agriculture** Research Laboratory at Winnipeg, and **Norman E. Borlaug,** plant pathologist in charge of grain varietal work for the **Rockefeller Foundation** in Mexico.

Dr. Johnson also received the **Elvin C. Stakman** award, given annually to the world's most outstanding cereal pathologist.

* * *

Ronald L. Crimson, University of Arizona, was first there to receive the annual Agronomy Achievement Award. It was presented to him, together with a check for $200 by NPFI's **Dr. Richard B. Bahme.**

* * *

At the University of Minnesota, **Paul E. Kaste** was named winner of NPFI's Agronomy Achievement Award, which was presented to him, with $200 and an engraved key, by **Edward R. Schumann,** NPFI representative in that region.

Nominations For Wiley Award

A. H. Robertson, president of the Association of Official Agricultural Chemists, announced that nominations are now being accepted for the third AOAC Harvey W. Wiley Award for Achievement in Analytical Methods. This award, which consists of $500 in cash, goes to the scientist who makes an outstanding contribution to the development of methods of analysis for foods, drugs, cosmetics, feeds, fertilizers, and pesticides, or for use in general analytical chemistry.

The second award was won by K. D. Jacob of the Department of Agriculture for his contributions to fertilizer analysis and technology.

Nominations must be submitted by April 1, 1959. Nominees need not be members of the Association. A general statement regarding the award may be obtained from the Secretary, William Horwitz, Box 540, Benjamin Franklin Station, Washington 4, D. C.

Today's farm worker produces food and fiber for himself and 23 other persons. Five years ago he produced for himself and 17 others.

Industry Meeting Calendar

DATE	EVENT	LOCATION	CITY
June 9-10	Southern Fert. Control Officials	Velda Rose Motel	Hot Springs, Ark.
June 14-17	National Plant Food Institute	Greenbrier Hotel	Wh. Sul. Sprgs., W. Va.
June 29-30	California Fertilizer Conference	University of California	Tacoma, Wash.
July 7-9	Pacific N.W. Fert. Conference	Winthrop Hotel	Davis, Calif.
July 15-18	Southwest Fertilizer Conference	Galvez Hotel	Galveston, Tex.
Aug. 18-22	Canadian Fertilizer Assn.	Bigwin Inn	Lake of Bays, Ont.
Sept. 24-25	Northeastern Fertilizer Conference	Biltmore Hotel	New York City
Oct. 14-16	Pacific N.W. Fertilizer Convention	Chinook Hotel	Yakima, Wash.
Nov. 9-11	California Fertilizer Association	Fairmont Hotel	San Francisco, Calif.

HELP YOURSELF TO BIGGER PROFITS

PHOSPHATE PRODUCTION
No other process begins to compare with *way-ahead* Sackett SUPER FLO in making normal, fortified and triple super-phosphates of premium quality at *way lower* cost.

MIXED GOODS MANUFACTURE
Your investment in the latest Sackett Methods of producing conventional fertilizers is *guaranteed* to pay handsome returns. We are anxious to prove it.

MODERNIZATION PROGRAMS
Step ahead of competition by entrusting your fertilizer expansion and modernization facility programs to our care. Many of the most forward-thinking fertilizer producers are glad they did.

GRANULAR FERTILIZER
Sackett Equipment leads the field in Granular Production.
The names of the fertilizer companies who have selected Sackett Granulating Processes above all others, read like a "Who's Who in Industry."

NEW PLANTS
Invest your dollars wisely by having Sackett build your new plant. We do the whole job . . . from the inception stage thru building construction and equipment fabrication to operating plant. See us for guaranteed results.

There is nothing that appeals to a man's reason more than plain facts. And, one plain fact is this . . . you can help yourself to bigger profits by resolving ***now*** to replace wasteful obsolete plant equipment with the latest rock-bottom cost methods as exemplified in Sackett Production Processes and Materials Handling Equipment. Why not start the ball rolling by writing or phoning us today?

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EQUIPMENT
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Architects and *Manufacturing* Engineers to the Fertilizer Industry Since 1897.

America's Foremost *Creative* Designers & Builders of Commercial Fertilizer and Superphosphate Plants . . . Related Production Equipment

CALIFORNIA

Agricultural Products Company, a division of **Nutrilite Products, Inc.,** Buena Park, plans the introduction nationally of new garden products through 1959 and increased advertising for NPI garden products now on the market. New agricultural products now in the final stages of development will be introduced nationally within the next few months.

FLORIDA

Southern Nitrogen, Savannah, Georgia, has announced plans to build a $3,000,000 plant near Tampa. This plant will draw its ammonia from the Savannah plant and will include facilities to produce solid 20.5% lime nitrate and a full line of nitrogen solutions. Construction will also start on a plant for nitric acid. Provision has been made for an ammonia plant on the same site at a later date. The whole development adds up to about $7,000,000.

GEORGIA

Southern Nitrogen is putting $500,000 into expansion of its ammonia plant at Savannah, to put this facility into position to supply the new Tampa operation reported above, according to **John R. Riley,** president. The expansion will boost ammonia production 20 to 25%, according to Mr. Riley. Southern Nitrogen has recently completed installation of limestone handling equipment at a cost of $250,000 which will permit production of 20.5% ammonium nitrate and limestone. Capacity runs some 400 daily tons. Another new product will be solid urea, capacity for which has also been added.

IDAHO

J. R. Simplot Co. has announced a $2,000,000 expansion of its fertilizer plant at Pocatello. Construction is already under way on a new sulphuric acid facility, and addition to the main plant will increase production by an estimated 65% to about 175,000 annual tons of high analysis goods. "Thus" says Grant Kilbourne, general manager, we will have a fully integrated operation at our Pocatello plant for the first time . . ."

* * *

Central Farmers Fertilizer has decided, for the time being, to drop planned production of calcium metaphosphate at the Georgetown plant, which is nearing operation. For the future, they are seeking a simpler method of production of calcium metaphosphate, and if the need exists among member cooperatives the project will be taken off the shelf again. Meanwhile progress is good on the $16,000,000 plant, which now has 22 groups backing it, and which now has added phosphate ore reserves since **Western Fertilizer Association** and other Western cooperatives have joined the picture.

ILLINOIS

International Minerals & Chemical $5,000,000 administrative and research center at Skokie was the subject of a six page, illustrated story in Architectural Forum, leading magazine in that field. "A fascinating collection of ideas on how a corporation headquarters should be built" said the publication. As our readers know, the IMC headquarters staff moved there last June.

INDIANA

V&M Fertilizer, Salem, was expected to be in operation by the time this item reaches print. It is a 250 daily ton bag and bulk plant operated by **Cleva Voyles** and **Lawrence Mahuron.**

KENTUCKY

Spencer Chemical and **Industrial Rayon** have decided not to proceed with the plans for a $10,000,000 plant at Ashland. Basically this was to have been a plant for nylon raw material, but ammonium sulphate would have been a by-product to be marketed by Spencer.

MISSISSIPPI

Coastal Chemical's new plant at Pascagoula recently made its first shipment. The Broadfield type superphosphate unit was installed by **Atlanta Utility Works.**

* * *

T. A. Quinn Chemical and Fertilizer Company, Yazoo City, have announced a $40,000 low analysis, liquid mix plant there, which should be in full operation this month.

MISSOURI

Monsanto Chemical has announced, without disclosing location, that they are shortly going on stream with the fertilizer industry's first computer-controlled chemical plant.

NEBRASKA

Ash Fertilizer Service has been incorporated at Lincoln, with $25,000 capitalization.

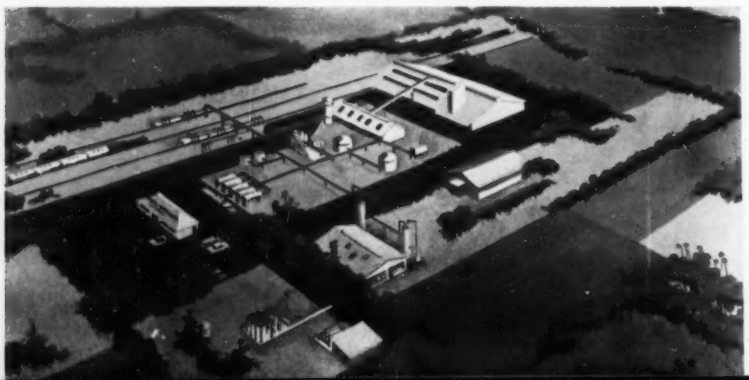
NEW MEXICO

National Chemical Resources Development Corp. have reached an agreement with **Olen F. Featherstone,** Roswell, concerning his interest in the 175,000,000 ton potash reserves the company controls in Eddy County. One shaft has already been completed, but refining facilities are still under way. National Chemical is jointly owned by **National Farmers Union Service, Phillips Petroleum** and **Kerr McGee.**

OHIO

O. M. Scott & Sons' chemical affiliate has announced a $2,000,000 expansion which includes doubling fertilizer capacity, the addition of pesticides and warehouse facilities.

Artist's sketch of $3,000,000 Florida Nitrogen Company plant to be built six miles from Tampa. Plant will be subsidiary of Southern Nitrogen Company of Savannah.



THEY BUY the BRAND with the SIDE HANDLE

Easy to Carry ... Easy to Pour

FIELD REPORT

TO: B.D.

RE: [redacted] Handle Order

Showed Mr. [redacted] our new Side Handle Bag...some of his customers had already mentioned it to him. He saw great benefits for both his dealers and their customers. He immediately recognized that it would be helpful in opening new distribution and getting more merchandising cooperation from dealers. Showed him our strength tests and the heavy abuse our handle could take. Got the order. Left him our Sales Promotion and Dealer Aid kit which he said would be useful to his Sales and Advertising Department. He plans a big promotion built around this sales "extra".

Hudson Bags increase your sales — cut your costs!

HUDSON MULTIWALLS

for further information write:

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477 Madison Avenue • New York 22, N. Y.

Plants at Pine Bluff, Ark. • Palatka, Fla. • Wellsburg, W. Va.

Scotts Chemical is the producing unit of the 89 year old seed and lawn care concern at Marysville.

OREGON

Great Western Chemical, Portland, have acquired a 60,000 square foot plant at $400,000 which was originally intended for occupancy by a battery concern.

UTAH

Delhi-Taylor Oil's potash reserves south of Moab, according to **C. H. Hobbs,** executive assistant to the president, are sufficient to supply 1500 daily tons for 40 years.

WASHINGTON

Graham-Wilhelm Chemical Co. has been newly incorporated, and is planning construction of a plant in Pasco. Meanwhile they are using the facilities of **Northern Idaho Chemical Co.** at Lewiston. **Hugh S. Graham** is executive vice-president.

CANADA

Canadian Industries Ltd. has announced completion of the modernization program reported here previously at its plants at Hamilton and Ingersoll. The two new granular fertilizer plants are now in full commercial production, according to **L. V. Clegg** production manager of CIL's agricultural chemical division. The third plant has been in operation since last June.

* * *

Cyanamid of Canada Limited at its Welland plant located in the province of Ontario near Niagara Falls will replace imported coal with gas in the manufacture of ammonia and ammonium nitrate, two of the plant's principal products.

Dr. L. P. Moore, president of **American Cyanamid Company's** Canadian subsidiary, has announced a conversion program costing about $5,000,000. He said that the volume of production at Welland, coupled with the urea and ammonia production at the new Hamilton Bay plant, will be sufficient to supply all the foreseeable needs of Ontario and Quebec for nitrogenous fertilizers.

It is expected that the conversion program will be completed within twelve months.

J. A. Schmidlein, manager of the Welland plant, said that after completion of the conversion program, the plant will be one of the most modern fertilizer facilities in the world.

One of the by-products available for the industrial market will be nitric acid, but the major portion will be neutralized with ammonia to produce ammonium nitrate to be used for direct application, for solutions or in mixed fertilizers.

EGYPT

Aswan Dam fertilizer plant will be brought up to 400,000 annual tons when the fourth unit is erected. A contract has been signed with a group from West Germany to supply and build. They are **Badische Anilin, Citra and Uhde.**

* * *

Kosseir Phophate, Italian owned, in exchange for permitting local business to invest in the operation, has been granted added permits to develop Red Sea phosphate mines.

INDIA

Chemical Construction or **Montecatini** will construct the $48,000,000 Trombay Island Indian Government plant. This is the fifth of Government owned fertilizer plants.

KOREA

A German group will build and jointly own the $23,500,000 fertilizer plant in South Korea, which is slated to be in operation by 1961, with 85,000 annual tons capacity.

* * *

The Choongjoo Fertilizer Plant, which has been much discussed as to cost and final production date, "will be completed in June", according to the Government. Training contract has been signed with **McGraw-Hydrocarbon,** who are building the plant. 23 technicians and engineers left last month for the US, where they will have a two-month training course at TVA. 42 are already in training in Switzerland.

PERU

Fertilizantes Sinteticos expect to get in production soon with their $10,000,000 petrochemical plant. Included in initial output estimates: 25,000 annual tons of fertilizer grade ammonium nitrate, 1500 tons of nitric acid, 15,000 tons of ammonium sulfate, 1000 tons of anhydrous ammonia.

SPAIN

A Cooperative financed by farmers of the Lerida province will build a 200,000,000 peseta plant which at first will produce 50,000 tons of nitrogenous fertilizers — which matches present demand — with provision for increase to 80,000 annual tons.

YUGOSLAVIA

A contract was signed in Belgrade Feb. 28 between Italian companies, **Montecatini** and **Amaldo,** and the Yugoslav **"Rudnap" Co.** for construction of an $8.5 million nitrogen fertilizer plant at Lukavaz in Bosnia.

changes

Mutual Fertilizer has become an affiliate of **Southern Fertilizer & Chemical,** both of Charleston, S. C. Both will continue operations, according to **A. Douglass Strobhar,** SF&C president. **Charles Ellis Jr.** is president of Mutual. It was organized by his late father.

* * *

Frank M. Crotts, former district salesmanager for **Colorado Fuel and Iron,** who retired last July, has organized and is president of **High Analysis Fertilizers, Inc.,** Derby, Kansas. The concern will broker nitrogen products, Ozark Mahoning Ammonium Phosphates and various other materials.

* * *

Sunland Industries, Fresno, California, may become part of **Food Machinery and Chemical Corp.,** if reported negotiations go through. The **Niagara division** would take over the concern which mixes fertilizers and produces pesticides.

* * *

Pan American Sulphur has moved its principal offices from Dallas to Houston.

* * *

Merger negotiations between **Smith-Douglass Company** and **Wilson & Toomer Fertilizer Company,** first announced last September, have now been terminated.

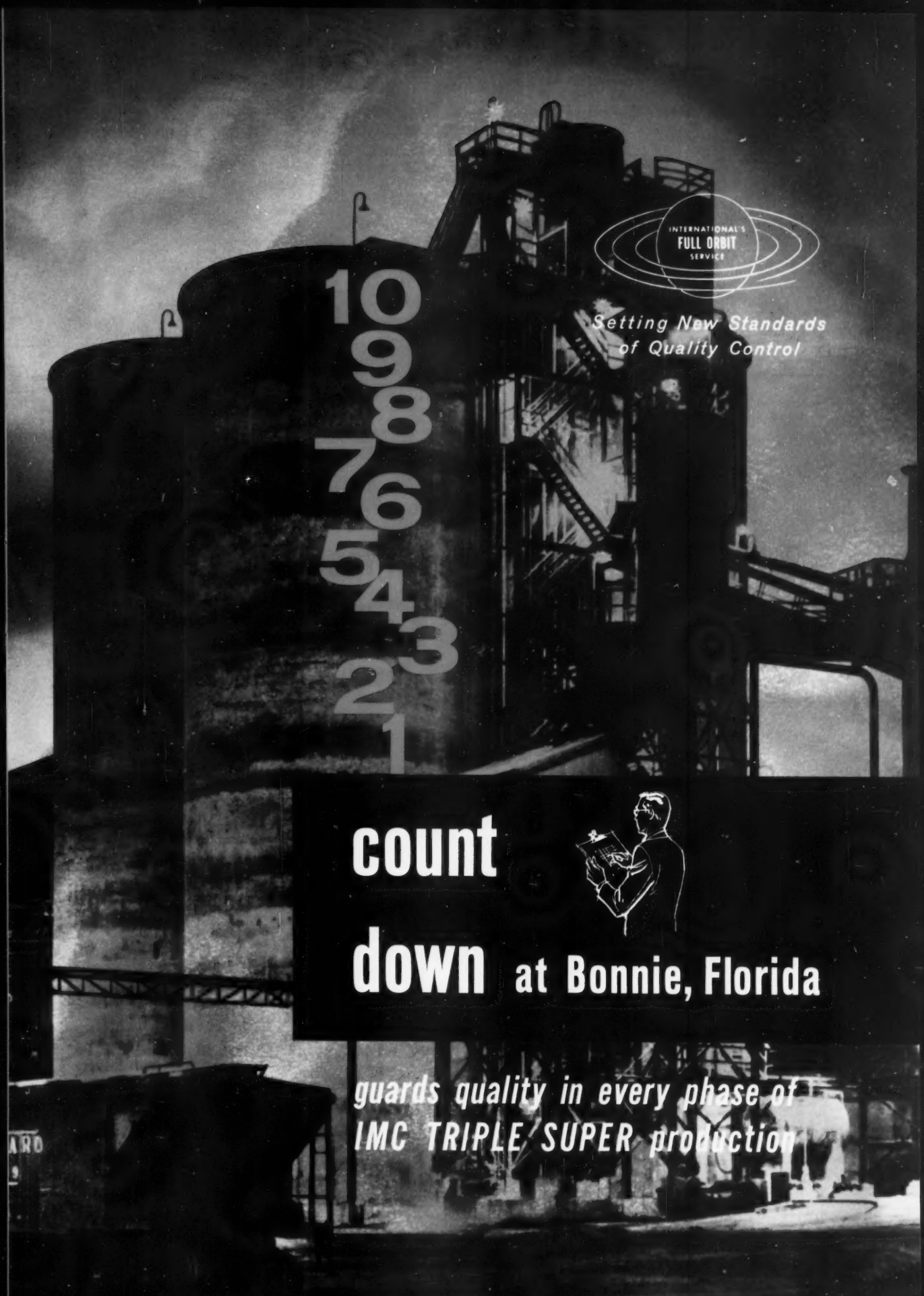
Agreement could not be made on terms satisfactory to both boards of directors. Further elaboration was not made in a joint statement issued by **Willard Ashburn,** president of Smith-Douglass and **Wallace Hicks,** president of Wilson & Toomer.

* * *

Monsanto Chemical Company's Inorganic Chemicals Division reorganized its manufacturing and engineering departments February 1, **E. J. Bock,** assistant division general manager, has announced.

At the same time, Mr. Bock announced the retirement on that date of **W. T. Durrett,** director of engineering for the division.

He said the engineering department will be organized along "project" lines under five assistant directors to provide greater emphasis on capital responsibility, improved


INTERNATIONAL'S
FULL ORBIT
SERVICE
Setting New Standards
of Quality Control
10
9
8
7
6
5
4
3
2
1
count
down at Bonnie, Florida
guards quality in every phase of
IMC TRIPLE SUPER production

10 9 8 7 6 5 4 3 2 1

PHOSPHATE ORE

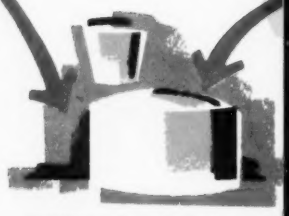
Shipped to Bonnie, Florida via hopper car from International's Noralyn Mine. **4 control analyses.**

SULFUR

High-quality sulfur is shipped to Bonnie from Louisiana and Mexico. **4 control analyses.**

from mine to manufacturer

International's triple super quality count-down adds up to a superior processing story



MIXING & DIGESTING

A mixture of gypsum and phosphoric acid is produced. **5 control analyses.**

PROCESSING of Triple Superphosphate by modern and precise methods goes a long way toward assuring the high quality product demanded by International customers. But quality is never trusted to equipment alone at our Bonnie, Florida plant.

Over 40 separate tests are used! More than 400 chemical analyses are made daily! International absolutely controls quality with a count-down that follows the product from raw material to shipment of the finished product. And every shipment of International Triple Superphosphate has its own certificate of analysis — mailed to you before material arrives at your plant. *You're guaranteed a high quality product when you order International's Triple Super.*

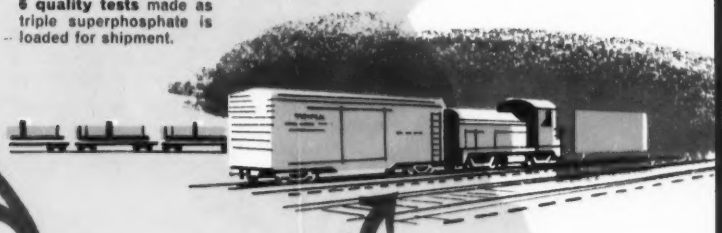
Another important customer advantage: International offers the services of a trouble-shooting staff to help answer your formulating questions or solve in-plant production problems.

It pays to use International Triple Superphosphate. Contact us now for unmatched product quality and exclusive service that smoothes your way to extra-profitable operation.

PLANT FOOD MANUFACTURER

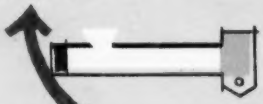
FINAL CONTROL CHECK

6 quality tests made as triple superphosphate is loaded for shipment.



GRANULATION

High grade phosphate rock is reacted with phosphoric acid, processed to form granular triple super. **7 quality tests.**

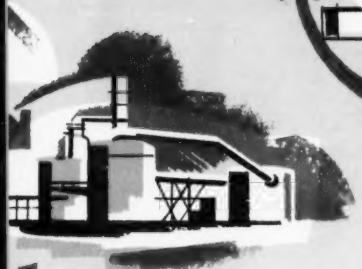


ACIDULATION

High grade phosphate rock is reacted with phosphoric acid to form triple superphosphate. **6 quality tests.**

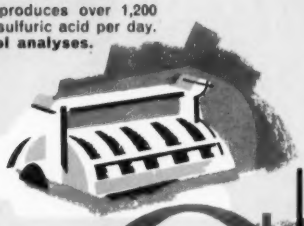
STORAGE

Triple superphosphate (granular, run-of-pile, coarse) is stored and cured in a 90,000 ton warehouse for a minimum of 5 weeks to assure desirable chemical and handling characteristics . . . maximum plant food availability.



SULFURIC ACID

Bonnie produces over 1,200 tons of sulfuric acid per day. **2 control analyses.**



FILTRATION

Gypsum and phosphoric acid are separated. **7 control analyses** of filtration product (dilute H_3PO_4) are made.

URANIUM EXTRACTION

Minute amounts of uranium removed from the phosphoric acid.

EVAPORATION

Phosphoric acid is concentrated by heating. **3 control analyses.**

CLARIFIED PHOSPHORIC ACID

1 control analysis.

FINAL CONTROL CHECK SHIPMENTS

6 quality tests.

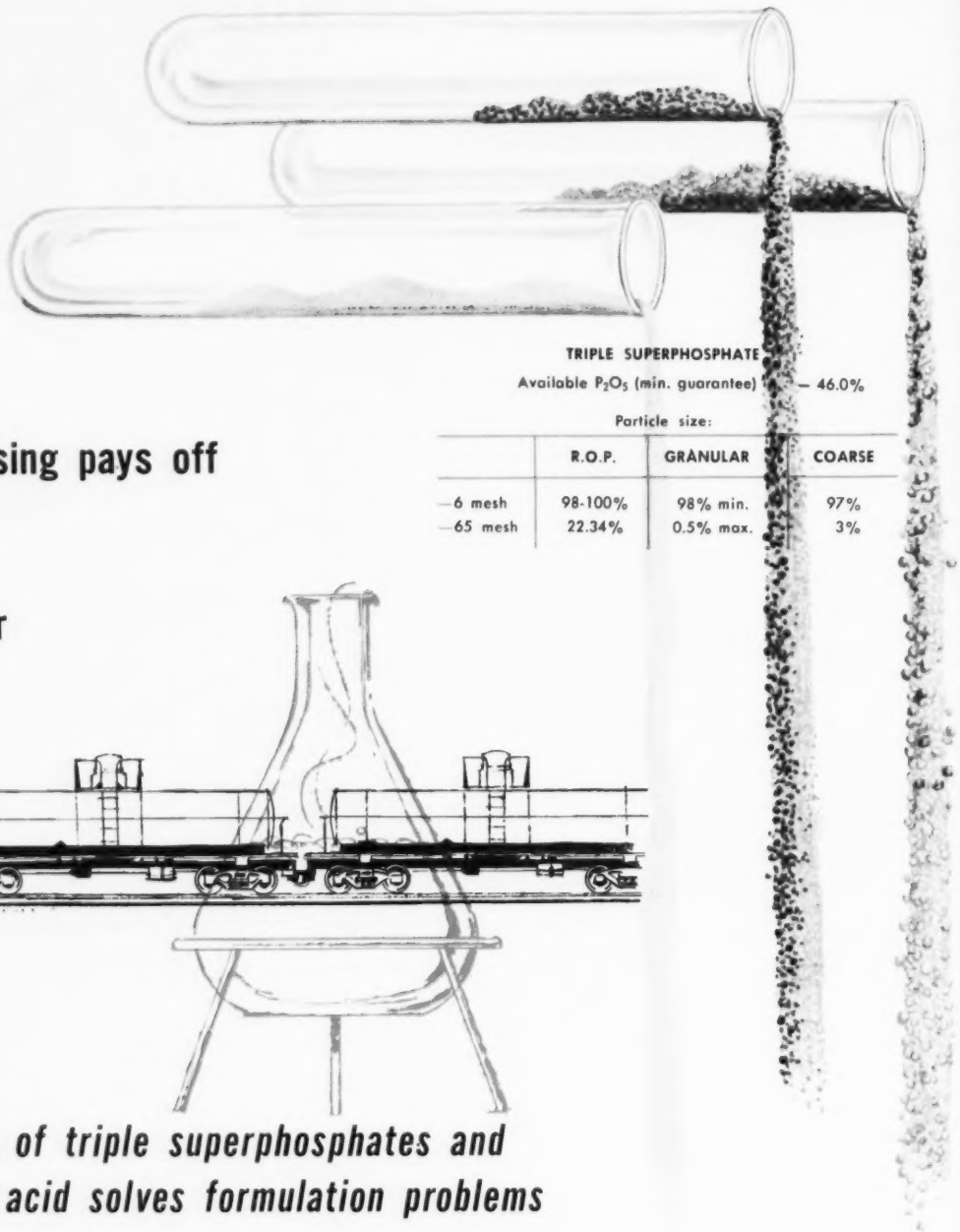
Over 40 separate tests assure quality!

Over 400 chemical analyses daily assure quality!

COARSE — International's coarse-textured Triple gives you the same excellent ammoniation batch after batch . . . promotes desirable agglomeration.

GRANULAR—International's granular Triple is non-crumbling, free-flowing, makes granulation easier. Sponge-like structure of granules facilitates ammoniation.

RUN-OF-PILE — International's fine-textured Triple provides uniform particle size, even density and proper moisture level that lets you ammoniate at higher rates, temperatures.



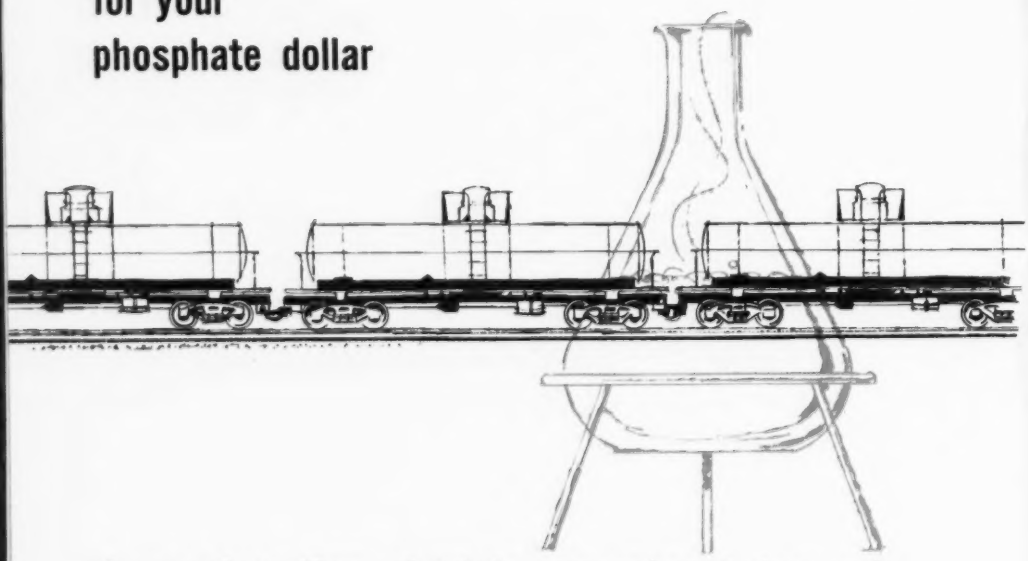
TRIPLE SUPERPHOSPHATE

Available P_2O_5 (min. guarantee) — 46.0%

Particle size:

	R.O.P.	GRANULAR	COARSE
—6 mesh	98-100%	98% min.	97%
—65 mesh	22.34%	0.5% max.	3%

Superior processing pays off with full value for your phosphate dollar



A complete line of triple superphosphates and phosphoric acid solves formulation problems

Now you can make International your dependable single source of all high-analysis phosphate ingredients. Benefit from International's three grades of top-quality triple superphosphate plus high purity 53%-55% phosphoric acid. Get all the quality advantages International's processing adds to your product. Be sure with International.

INTERNATIONAL'S FULL ORBIT SERVICE

MINERALS International CHEMICALS

Creators of Living Minerals

PHOSPHATE DIVISION

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

Administrative Center: Skokie, Illinois

engineering development and greater specialization. The manufacturing department will be reorganized under two directors of manufacturing with additional technical assistants to provide increased emphasis upon technical process improvement and coordination between production activities and the research, engineering, marketing and control departments.

John M. Depp, former director of manufacturing, has become director of engineering. **O. R. Bailey,** manager of the engineering department's construction section, will become an assistant director of the department in charge of construction and procurement. **S. B. Johnson,** assistant to the director of the manufacturing department, will become an assistant director of the engineering department in charge of nitrogen engineering; **F. P. LaBelle,** now an assistant director of engineering, will be in charge of phosphorus and phosphates engineering; **Clyde P. Orr,** manager of the chemical section of the engineering department, will become assistant director in charge of heavy chemicals and detergents engineering and **C. L. Parish,** manager of the electrical section of the engineering department, will become assistant director in charge of engineering development and technology. All of these men are St. Louisians.

R. R. Rumer, now manager of the division's Monsanto, Idaho, plant, will become a director of manufacuring (nitrogen and heavy chemicals), and will be responsible for plants at Everett, Mass.; Camden, N. J.; El Dorado, Ark.; and Luling, La. He also will be responsible for Inorganic division manufacturing facilities at the company's plants at Monsanto, Ill.; Avon, Calif.; Anniston, Ala.; and Nitro, W. Va.

Herbert O. Tittel, now manager of the division's Trenton, Mich., plant, will become a director of manufacturing (phosphates and phosphorus) and will be responsible for plants at Carondelet, Mo.; Monsanto, Tenn.; Monsanto, Idaho; Kearny, N. J.; and Trenton, Mich. He also will be responsible for Inorganic division manufacturing facilities at Long Beach, Calif., and for package phosphorus burner plants.

* * *

Neff Machinery, Inc., with sales and service facilities in Miami and West Palm Beach, has been named exclusive franchise representative for Yale industrial lift trucks and tractor shovels in Southern Florida, it has been announced by **Clyde R. Dean Jr.,** general sales manager, Yale materials handling division, **The Yale & Towne Manufacturing Co.**

* * *

Tusko Fertilizer, Walla Walla, Washington, has been purchased by **York Fertilizer** of Milton-Freewater. Operation will be continued in Walla Walla, but the business office will be moved to Milton-Freewater.

* * *

Leon Burger has bought the **Blue Valley Fertilizer Company** plant at Marysville and will operate it as the **Burger Fertilizer Company.**

* * *

U.S.I. has established a San Francisco Sales Office, it has been announced by **Alden R. Ludlow,** sales vice president of the **U. S. Industrial Chemicals Co.,** division of **National Distillers and Chemical Corporation. Kenneth Fietz,** who will be San Francisco manager, has been a representative of the firm's New York Sales Division for the past sixteen years. He will report to **Robert E. Alexander,** Pacific Coast division manager at Los Angeles.

* * *

The Missouri Farmers Association —MFA—has purchased the physical assets of **Danco Fertilizer, Inc.** The sale price was not disclosed.

Danco operates a large plant at Maryville, Mo., and a branch plant at Fairfax, Mo. It marketed a line of fertilizer products under the Danco label.

The new owner is not expected to make any major changes in the personnel or operation of the plants.

* * *

Solar Nitrogen Chemicals, Inc., a new company jointly owned in equal proportions by the two parent companies, was announced by **Charles E. Spahr,** president of **The Standard Oil Company (Ohio),** and by **Ralph K. Gottshall,** president of **Atlas Powder Company.**

Solar Nitrogen will engage in the manufacture and sale of agricultural and industrial chemicals; will acquire all of Sohio's present ammonia and related petrochemical facilities at Lima, Ohio; and will succeed to the business heretofore conducted by Sohio in these products.

The Sohio Chemical Company, a wholly-owned subsidiary of The Standard Oil Company (Ohio), will continue to operate the plant and to act as sales agent for the new company. **Edward F. Morrill,** president of Sohio Chemical Company, has been elected president of Solar Nitrogen Chemicals, Inc., and **Edward J. Goett,** executive vice president of Atlas Powder Company, has been elected vice president. There will be no change in personnel, product line, service policies, or sales territories.

Sohio has engaged since 1955 in the manufacture and sale of ammonia, nitrogen solutions, urea, nitric acid, and dry ice, at its petrochemical plant next to its Lima Refinery. Atlas Powder uses ammonia in its explosive and chemical activities.

In commenting on the organization of the new company, Mr. Spahr said that Sohio's petrochemical plant has been operating profitably, and that it appears advantageous at this time to add participation by a company that is a substantial consumer of ammonia.

Mr. Gottshall said that the expansion and further diversification of operations through the acquisition of an interest in a profitable modern ammonia plant is in accordance with Atlas Powder Company's forward planning and extensive interest in nitrogen research.

Sackett Increases Production Facilities

A. J. Sackett and Sons Co., Baltimore, are increasing their fabricating and warehouse area by 10,000 square feet. The added area will be equipped for production of granular type fertilizer machinery.

obituaries

Thomas A. Barnard, 45, president of Growers Chemical Supply Co., Azuza, California, died February 1 in Newport Beach, Cal.

John Herbert Kelly, Jr., general superintendent of Etiwan Fertilizer Co., Charleston, S. C., died February 5, in Charleston.

Elmer E. Osborne, 98, for 61 years power engineer for American Agricultural Chemical Co., retired five years ago, died February 5, in Carteret, N. J.

William Andrew Speer, 80, retired superintendent of Planters Fertilizer and Phosphate Co., and former Mayor of Anderson, S. C., died in Charleston, S. C. January 29.

CF-Staff Tabulated TONNAGE REPORTS

FERTILIZER TONNAGE REPORT (in equivalent short tons) Compiled by Cooperative State Control Officials and Tabulated by COMMERCIAL FERTILIZER Staff

	January		December		Oct.-Dec. Qtr.		July-December		January-June		YEAR (July-June)	
STATE	1959	1958	1958	1957	1958	1957	1958	1957	1958	1957	1957-58	1956-57
Alabama	22,378	14,989	19,521	14,802	108,599	96,046	199,265	172,721	734,062	808,901	906,783	983,614
Arkansas	8,769	8,456	5,434	4,898	21,992	17,829	64,092	62,752	226,889	265,235	289,641	325,150
Georgia	40,246	34,593	49,835	45,239	187,378	169,097	294,751	269,529	944,618	980,824	1,214,417	1,234,383
Kentucky	.....	58,756*	.....	12,716*	.....	47,868*	.....	88,771*	435,023	444,107	523,794	534,391
Louisiana	10,101	6,779	6,511	6,449	34,219	32,419	64,152	64,192	232,743	200,277	296,935	271,406
Missouri	.....	15,042*	44,459	31,484	198,141	142,402	362,437	335,312	420,615	460,487	755,927	791,830
N. Carolina	.....	66,664*	33,256	31,187	138,453	127,161	228,055	199,466	1,261,685	1,300,353	1,461,131	1,516,587
Oklahoma	2,883	4,110	2,589	2,486	25,438	21,604	68,848	51,436	55,964	52,836	107,400	107,345
S. Carolina	56,071	25,022	18,332	20,270	76,102	68,388	134,202	116,874	615,733	694,571	732,607	817,500
Tennessee	.....	5,053*	10,352	6,000	47,773	66,286	127,116	135,717	307,182	383,457	442,889	524,638
Texas	38,325	24,498	24,878	21,027	119,006	104,683	222,800	213,801	452,327	392,770	666,128	595,176
California	(reports compiled quarterly)				245,738	225,490	450,767	441,969	679,577	663,484	1,123,235	1,079,748
Oregon	(reports compiled quarterly)				17,175	17,140	50,176	44,793	132,511	138,926	177,304	201,073
Virginia	(reports compiled quarterly)				84,147	66,405	160,178	140,783	549,773	600,158	690,556	754,233
Indiana	(reports compiled semi-annually)						316,260	284,959	795,506	781,268	1,080,465	1,087,185
New Hampshire	(reports compiled semi-annually)						.....	3,996*	16,053	15,730	20,019	18,983
TOTAL	**178,773**	**263,962**	**215,167**	**196,558**	**1,304,161**	**1,202,818**	**2,743,099**	**2,627,071**	**7,860,261**	**8,183,384**	**10,489,231**	**10,843,242**

..... (not yet reported) * Omitted from column total to allow comparison with same period of current year.

MATERIALS MARKETS

ORGANICS: Demand for fertilizer organics continues in excess of supply. All producers of leather nitrogenous tankage are completely sold out for the season, at contract prices of $3.50 to $4.75 per unit of ammonia, bulk, f.o.b. shipping point. Resale prices are approximately 50¢ per unit of ammonia higher, but practically no resale supplies are available.

SEWAGE SLUDGE: Market is nominally $3.25 per unit of ammonia and 50¢ per unit of APA bulk, f.o.b., for supplies from a major midwestern producer, but the entire production is under contract, and deliveries are being curtailed even against contracts at present.

CASTOR POMACE: Domestic production is nominally $34.00 per ton in bags, f.o.b. Middle Atlantic shipping point, with the producers sold out through April, and only limited quantities available for May/June. Imported material is currently quoted at $5.00 per unit of ammonia in bags, f.o.b. Tampa, Florida, for shipment from abroad, or $5.25 per unit of ammonia ex-store.

DRIED BLOOD: This market is fairly steady at around $7.25 per unit of ammonia in the New York area, and $7.75 per unit of ammonia in the Chicago area.

POTASH: Demand is in seasonal volume, with shipments from domestic sources rising. Prices remain steady at previously announced seasonal schedules. Imported Potash continues to arrive periodically at Atlantic ports, at prices somewhat lower than the cost of domestic material delivered to those ports.

GROUND COTTON BUR ASH: Supply position of this type of potash, primarily in the form of carbonate of potash, has improved, and demand continues steady at prices approximating the delivered cost of domestic sulphate of potash for most areas.

SUPERPHOSPHATE: Demand is improving for mixing purposes as the season expands. Prices are steady and supplies at some producing centers tightening.

AMMONIUM NITRATE LIMESTONE: Demand is in high seasonal volume, and prices are currently $41.50 per ton bulk and $45.50 per ton bagged, f.o.b., Middle Atlantic production, and f.o.b. cars at Atlantic and Gulf Ports.

SULPHATE OF AMMONIA: Prices continue steady at $32.00 per ton bulk for coke oven standard granule type, and $35.00 per ton for large granular synthetic type, f.o.b. origin. Port prices continue at $36.00 to $39.00 per ton bulk at Atlantic coast port warehouses.

NITRATE OF SODA: Price of this form of solid nitrogen continues at $45.50 in bags, and $41.50 in bulk, f.o.b. Atlantic and Gulf Ports. Demand is in high seasonal volume.

GENERAL: Movement of fertilizers to consumers in the Southeast has not reached peak volume, but is expanding. In other areas, weather conditions have held back the normal movement of fertilizer. Most basic fertilizer materials are in adequate supply with the exception of natural organic ammoniates, which are in very tight supply relative to demand.

Hudson Announces New Bag Sealer

The Multiwall Division of Hudson Pulp & Paper Corporation announces availability of its new Moisture Vapor Transmission Sealer for in-plant use.

This new sealer, it is claimed, brings to reality the economies of Multiwall bags for many products of acid, alkaline, hygroscopic, deliquescent or anhydrous properties hitherto shipped in drums. The industry has long had barrier sheets —foil wall, cold-proof AL, Moisbar, PE coated—which, singly or in combination, provide side wall protection for the shipment of such materials. Up till now, however, the problem of insuring a positive end-seal has impeded the use of Multiwalls. In certain cases, wax-dipping has proved effective, but this is a slow and expensive method, requiring a separate filling location.

The Hudson Sealer fits right into the filling line, and operates uninterruptedly at the regular line speed of 32-48 feet per minute. Employing both heat and pressure, it applies tapes in a wide range of materials ranging from 1½ mil PE up to 5 mil PE for positive protection.

Hudson is offering its MVT Sealer on both a lease and outright sale basis. Either way, Hudson believes costs will be quickly amortized.

Sitting on sidings when a sudden cold wave recently blanketed the nation, car after car of new SPENSOL 440 came through with no salting out — even where temperatures hit −20° F. (See story below.)

"Even At -20° F. SPENSOL 440 Didn't Salt Out In Tank Or Lines"

reports Don Gilchrist of Gilchrist Plant Food Company, Morris, Ill.

New SPENSOL 440 (22-66-6) ends cold-wave worries for fertilizer manufacturers across the nation:

Will a tank car of new SPENSOL 440 salt out when temperatures drop far below freezing? "No!" say the many manufacturers who had cars of SPENSOL 440 on their sidings when the recent cold wave struck.

In fact, at the Gilchrist Plant Food Co. in Morris, Ill., there was no salting out in the tank or the non-insulated lines—even after the temperature dived to 20° below zero! But that's not the *only* advantage you get with SPENSOL 440:

Save Up To $1.97 Per Ton

Because SPENSOL 440 has a higher percentage of total nitrogen as fixed nitrogen, you use less sulfuric acid in formulating your product.

In making 12-12-12, for example, you cut sulfuric acid use as much as 123 lbs. per ton of 12-12-12. At a delivered cost of $27.00 per ton of sulfuric acid, you save $1.66.

This also makes enough room in the formula to let you get as much as 1.3 more units of P_2O_5 from normal superphosphate, which costs about 24¢ less per unit than triple superphosphate. That adds an extra saving of 31¢ for a total saving of $1.97 per ton!

Big Savings On Freight

Because SPENSOL 440 contains only 6% water, you pay less freight, your product needs less drying and you can cut recycle rates in half.

For more information on SPENSOL 440, write, wire or phone Spencer Chemical Company at the sales office nearest you:

SPENCER®

America's Growing Name in Chemicals

SPENCER CHEMICAL CO., Dwight Bldg., Kansas City 5, Mo.; District Sales Offices: Atlanta, Ga.; Chicago, Ill.; Memphis, Tenn.; Kansas City, Mo.; Works: Pittsburg, Kans.; Chicago, Ill.; Henderson, Ky.; Vicksburg, Miss.; Orange, Texas.

Insist on SPENSOL GREEEN (Spensol Nitrogen Solutions)

Call TULL in ATLANTA when installing or repairing a

NITROGEN SOLUTION SYSTEM

Because—

WE KNOW OF NO OTHER PLACE WHERE A SIMPLIFIED PACKAGE OF CERTIFIED COMPONENT PARTS CAN BE FURNISHED FOR IMMEDIATE SHIPMENT.

Each part is guaranteed to give 100% service in the corrosive atmosphere of Nitrogen Solution.

So Why Take A Chance on picking up items from miscellaneous sources. Purchase parts that are matched and guaranteed by the oldest supplier of fertilizer plant fittings.

Send For Your Booklet, "The Installation and Operation of a Nitrogen Solution System," to P. O. Box 4628, Atlanta 2, Ga.

J. M. TULL METAL & SUPPLY COMPANY, INC.

285 Marietta St., N.W. JAckson 5-3871 Atlanta 2, Ga.

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Offices: NORFOLK, VA., CHARLESTON, S. C., TAMPA, FLA.
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Exclusive Distributors: DUVAL SULPHUR & POTASH COMPANY
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AMMONIATES — FEED STUFFS — SULPHUR — POTASH
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RESEARCH NOTES

USDA's Soils, Water and Fertilizer Research Advisory Committee has listed as a top need, research on agricultural watershed runoff. Other pressing needs, they said, include studies of forest management to increase water yields. Copies of the full report will be available from Dr. Carleton P. Barnes, Office of Administrator, Agricultural Research Service, USDA, Washington 25, D. C.

* * *

Armour Research Foundation will soon have in operation the world's highest power water-boiler nuclear reactor. This will cut the time of research and open new areas of physics and chemistry research.

* * *

A theory is being studied that the Earth, passing through meteor dust causes rain 30 days later. This has been reported by Dr. E. G. Bowen, chief of radiophysics division, Commonwealth Scientific and Industrial Research Organization, Sydney, Australia.

* * *

American Potash Institute has released a set of slides illustrating the difference placement may make in the farmer's crop. It can be bought for $4, or loaned for 10 days. 40 pictures and script to match is included in the kit.

* * *

British BBC has programmed a discussion of volcanic ash, which they report as superior to the best soil as a plant growth stimulant. Actually the effect seems to be that of a soil conditioner because the tiny ash grains have minute cavities which store water, stimulate the movement of air and water needed by soil bacteria. It also speeds up germination, in a manner not yet explained. 92% of seeds planted in volcanic ash germinate within two or three days of planting. And, unlike other conditioners it lasts "forever" because it cannot rot or dissolve.

GRANTS

Dr. Richard B. Bahme, NPFI's Western Regional Director has presented to **Ben Zur,** University of California graduate student, a $3,000 fellowship for research to bring to light new facts on the interaction of fertility and soil moisture. The work will be carried on at Davis. The grant was made at the recent California Irrigation Conference.

* * *

Montana AES has been granted $2,000 to assist in the use of nitrogen fertilizer for corn. **Phillips Petroleum** made the grant.

* * *

New Laboratory In Use At Connecticut AES

Staff members of the oldest agricultural experiment station in America have moved into the newest experiment station building, as The Connecticut Agricultural Experiment Station occupies Slate Laboratory, on the Station grounds at 123 Huntington Street.

The new three-story building, specially equipped for research in the plant sciences, is named for Director Emeritus William L. Slate of Hamden.

Minnesota To Have New Station

The new Southwestern Agricultural Experiment station of the University of Minnesota will be located near Lamberton in southern Redwood county.

TRIPLE THREAT CHEMICAL!
SPRAYS • DUSTS • FERTILIZER
TRIANGLE BRAND COPPER SULFATE
Successful growers prefer fertilizer and fungicide formulations containing Triangle Brand Copper Sulfate. They know that in fertilizers it is necessary for enrichment of the soil; in fungicidal sprays, where Bordeaux Mixture is the most reliable, or in copper dusts, Triangle Brand Copper Sulfate has definitely proved its superiority over organic materials.
Use of Triangle Brand Copper Sulfate in sprays, dusts and fertilizers results in larger and healthier crops, meaning MORE PROFIT for the grower and MORE PROFIT for the mixer or formulator who serves him.
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INSTANT (powder) for quick and efficient mixing of Bordeaux sprays.
DIAMOND (snow) small or large crystals, containing 25.2% metallic copper.
BASIC Copper Sulfate in powder form, containing 53% metallic copper.
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Contact us today for further information on Triangle Brand Copper Sulfate and its use in agricultural formulations.
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Tax Equality Committee

HEADED BY HOWELL

Joseph A. Howell of Richmond, Virginia, a prominent fertilizer executive and consultant, was named chairman of the Fertilizer Committee for Tax Equality, of the National Tax Equality Association, Washington, D. C.

As chairman of the committee, Mr. Howell succeeded Howard A. Parker, president of the Parker Fertilizer Company of Sylacauga, Ala.

Vice-Chairmen of the committee are Fred J. Woods, president, the Gulf Fertilizer Co., Tampa, and R. L. King, president, Georgia Fertilizer Co., Valdosta, Ga.

Mr. Howell was the first president of the National Plant Food Institute, and a former president of Virginia-Carolina Chemical Corporation. His career in the fertilizer industry started in accounting in 1922 and has been continued recently in a consultant capacity for nationally-known manufacturers.

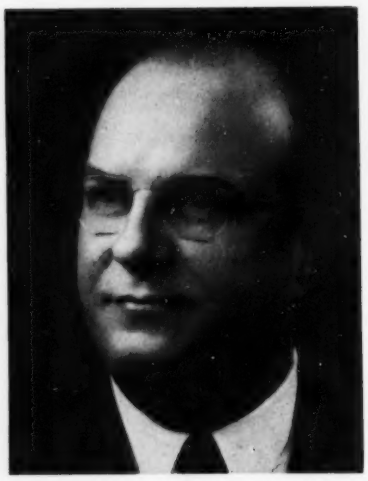
In addition to serving as chairman of the committee, Mr. Howell will be a consultant to the National Tax Equality Association.

Widely known in the plant food industry, Mr. Howell achieved national recognition for his leadership in the consolidation of NFA and APFC into one strong-voiced organization, the National Plant Food Institute.

When he concluded his term as president of the Institute, the board of directors unanimously adopted a resolution recognizing Mr. Howell's 'prominent leadership both in uniting the fertilizer industry under its one trade association . . . and in resolving the many organizational problems encountered during the first year of operation by serving as its first president.'

In the resolution, the board expressed 'appreciation and commendation for the many services, contributions and the outstanding leadership provided by Mr. Howell during his term as first President of the Institute.'

Under the leadership of Mr. Howell, the Fertilizer Committee for Tax Equality will conduct a dynamic campaign to acquaint the public and the Congress with the necessity for correction of the present laws which unfairly discriminate against the fully-taxed fertilizer and chemical companies.



JOSEPH A. HOWELL

Other members of the fertilizer committee are: L. G. Black, president, Ark-Mo Plant Food Co., Corning, Ark.; William Lillard, president, Ft. Smith Cotton Oil Co., Ft. Smith, Ark.; Tom Faulkner, president, Helena Wholesale Inc., Helena, Ark.; George Dunklin, gen mgr., Planters Fertilizer and Soybean Co., Pine Bluff, Ark.

B. H. Jones, chairman of the board, Sunland Industries, Inc., Fresno, Calif.; F. F. Bales, president, American Fertilizer and Chemical Co., Denver, Colo.; L. B. Angel, president, Polk County Fertilizer Co., Haines City, Fla.; Henry Pridgen, mgr., Florida East Coast Fertilizer Co., Homestead, Fla.; Wallace B. Hicks, president, Wilson & Toomer Fertilizer Co., Jacksonville, Fla.; R. M. Howard, president, Howard Fertilizer Co., Orlando, Fla.; C. F. Daily, president, West Coast Fertilizer Co., Tampa, Fla.; W. L. Waring, Jr., president, Lyons Fertilizer Co., Tampa, Fla.

James Champion, Jr., vice president, Albany Warehouse Co., Albany, Ga.; M. E. Williams, president, Stevens Industries, Inc., Dawson, Ga.; Allen D. Brent, vice president, So. Fertilizer & Chemical Co., Savannah, Ga.; Don Peterson, president, Ashkum Fertilizer Co., Ashkum, Ill.; D. R. Gilchrist, president, Gilchrist Plant Food Co., Morris, Ill.; J. L. Schell, secretary & treasurer, Kingsbury & Co., Inc., Indianapolis, Ind.; Harold S. Vorhes, executive vice president, Vorhes Chemical Corp., Charles City, Iowa.

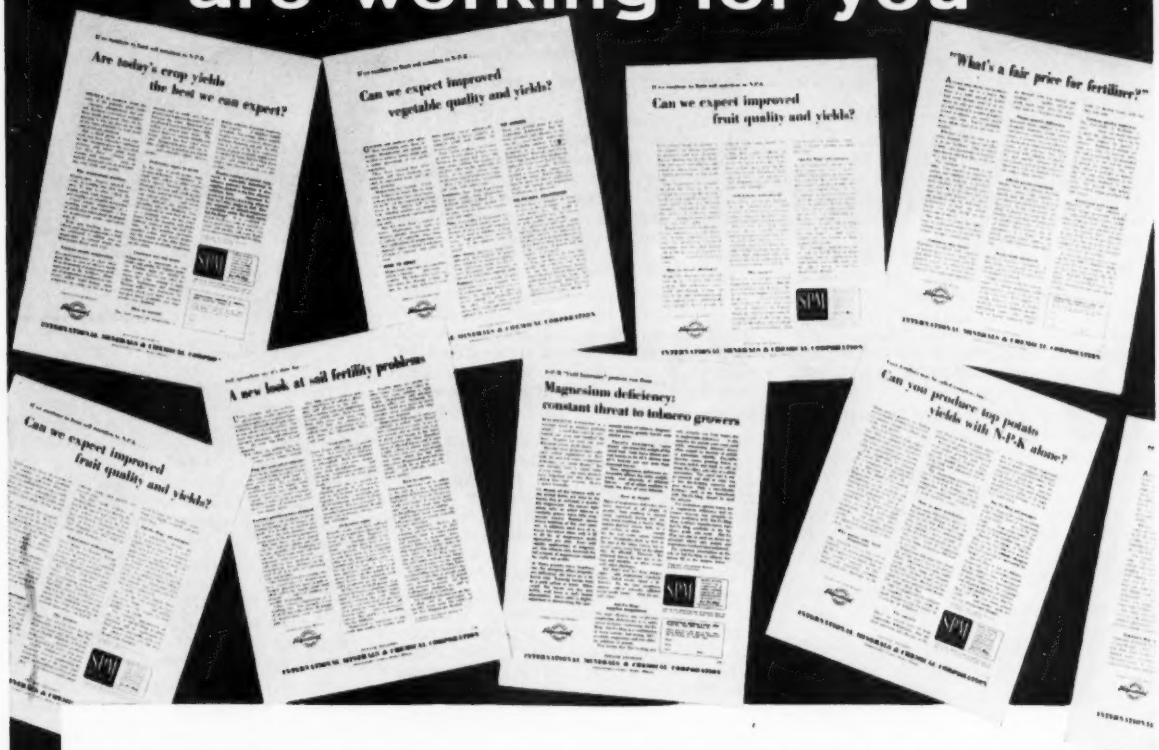
Jack B. Snyder, president, Snyder Chemical Co., Inc., Topeka, Kansas; Gene Van Deren, vice pres. and gen. mgr., Bluegrass Plant Foods, Inc., Cynthiana, Ky.; Ed Schueller, secretary-treasurer, North American Fertilizer Co., Louisville, Ky.; J. D. Stewart, Jr., president, Federal Chemical Co., Inc., Louisville, Ky.; G. R. Nooe, gen. mgr. & treas., Ohio Valley Fertilizer Corp., Maysville, Ky.; T. J. Bartlett, partner, Bartlett & O'Bryan Fertilizer Co., Owensboro, Ky.; Nat H. Love, pres., Commonwealth Fertilizer Co., Inc., Russellville, Ky.

Curtis Taylor, vice president, Arcadia Cotton Oil Co., Inc., Arcadia, La.; S .M. Hackett, president, Dixie Fertilizer Co., Inc.; Shreveport, La.; A. J. Schuler, president, Welcome Agricultural Chemical Co., Welcome, Minn.; Robert Harding, president, Valley Fertilizer Co., Greenville, Miss.; Doyle Patterson, president, Farm Belt Fertilizer & Chemical Co., Kansas City, Mo.; Howard Peterson, president, Lincoln Service & Supply Co., Grand Island, Nebraska; William Farley, president, The Smith Agricultural Chemical Co., Columbus, Ohio.

George Gage, Pres. & Gen. Mgr., Anderson Fertilizer Co., Inc., Anderson, S. C.; W. G. Nelson, exec. vice president, Southwest Fertilizer & Chemical Co., El Paso, Texas; James D. Dawson, Jr., Gen. Mgr. Fidelity Chemical Corp., Houston, Texas; L. P. Martin, pres., Marshall Cotton Oil Co., Marshall, Texas; M. S. Wright, Sr., president, Texas Farm Products Co., Nacogdoches, Texas; Harold Trammell, president, Farmers Fertilizer Co., Texarkana, Texas; H. W. Lust, president, Tyler Fertilizer Co., Tyler, Texas; Ralph B. Douglass, board chairman, Smith-Douglass Co., Inc., Norfolk, Va.; and Donald W. Aitken, president, Midwestern Phosphate Corp., Madison, Wisc.

Although the number of farms decreased by nearly a fourth, total assets of American farmers has more than tripled since 1940.

2,567,000 MESSAGES are working for you


Are today's crop yields the best we can expect?
Can we expect improved vegetable quality and yields?
Can we expect improved fruit quality and yields?
"What's a fair price for fertilizer?"
Can we expect improved fruit quality and yields?
A new look at soil fertility problems
Magnesium deficiency: constant threat to tobacco growers
Can you produce top potato yields with N-P-K alone?

The story of magnesium starvation is one which needs telling and re-telling. And that's just what Sul-Po-Mag advertising does . . . tells and sells through factual, believable messages in dozens of magazines which your customers read. A few of these ads are shown above.

This year Sul-Po-Mag advertising appears regularly in magazines reaching 2,567,000 farmers and growers. These informative messages are designed to increase interest in magnesium deficiencies, help farmers and growers to better understand plant feeding problems.

Use this seal to identify your fertilizer . . . growers look for it

S·P·M PREMIUM

Quality fertilizer containing a combination of readily available magnesium and sulphate of potash obtained from *Sul·Po·Mag*®
(DOUBLE SULPHATE OF POTASH & MAGNESIUM)
Reg. Trade Mark IM&C Corp. Skokie, Ill.

You can take advantage of the increasing demand for Sul-Po-Mag this year . . . formulate premium fertilizer containing Sul-Po-Mag. Write or call us for more information.

Sul-Po-Mag

Creators of Living Minerals

International Minerals & Chemicals

POTASH DIVISION

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

Administrative Center: Skokie, Ill.

6-59

Equipment News Roundup . . .

New Single, Duplex Bag Packer

A flexible bag packer which can be adjusted to handle free-flowing or semi-free flowing products, the Bemis-Way Scale, has been developed by the Bemis Bro. Bag Company in a single- or duplex-scale model.

The bagger, which can fill and weigh 25- to 200-lb. size multi-wall paper, polyethylene or textile bags at speeds up to 18 bags per minute, maintains weight accuracy within two ounces. A gravity bulk or vibrator bulk feed system for increasing flow of product is optional.

The choice of single- or duplex-model enables accurate weighing and high speed bagging for both small and large operations. Each packer is specially engineered for the specific product and individual requirement.

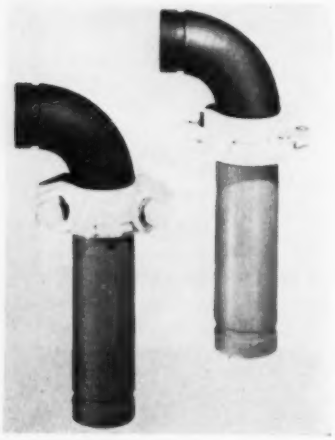
The new Bemis-Way Scale is available with either the Bemis Taper-Grip or Powr-Grip bag holder. A special feature is the automatic bag release controlled by a timer to prevent trailing of materials. Other optional features include stainless steel product contact surfaces, corrosion resistant paint and Bemis-built sewing machine pedestal and conveyors designed especially for the scale.

Simplified design and construction assure better handling of a wider variety of products. No special operator skills are required.

A new bulletin, No. 350, which describes operation and engineering specifications, is available by circling number 1 on CF's Information Service Card, page 51.

Plastic Fittings For Piping

Victaulic Company of America has announced a complete line of full-flow molded plastic pipe fittings with grooved ends, for quick-jointing plastic pipe with Victaulic mechanical couplings. The new fittings are molded in sizes from 1½-inch to 8-inch in three materials: regular polyethylene, special high temperature linear type polyethylene, and polypropylene.



Plastic fittings can match the piping material. Elbows, tees, crosses, 45 degree laterals, reducers, caps and flanged adapter nipples for jointing to bolted flange systems are available in all three materials.

Coupling absorbs expansion and contraction of the plastic pipe. The quick-coupled joints can also be put into service immediately. Flush interiors at the joints provide good flow characteristics.

Data and counsel are available by circling Number 2 on CF's Information Service Card, page 51.

Belt Conveyor Idlers

"Belt Conveyor Idlers," Book 2716, prepared by Link-Belt Company, contains detailed engineering selection data on five new series and 23 types of belt conveyor idlers and illustrates their versatility for a wide range of conveyor applications.

The new 40-page book lists the complete line of idlers now being manufactured by the company for belt widths of 14 inches up to 84 inches. All idlers are equipped with inverted angle bases and removable steel retainer clips that hold idler rolls securely in position. "Grease-through" feature permits lubrication of all rolls simultaneously from a single fitting. This is a new feature on all series except the lightest duty idlers. All idlers are shipped from the factory filled with grease ready for immediate field installation.

The new book is conveniently key indexed for easy reference, as a handy aid in selecting the exact idlers to match specific belt conveyor operating requirements. For a copy of Book 2716, "Belt Conveyor Idlers," without cost, circle number 3 on CF's Information Service Card, page 51.

Gear Reducer

A combined Gear Reducer and Gearshift Drive Unit, giving 4 or 8 speeds on the output shaft of the Gear Reducer, has been announced by The Lima Electric Motor Co., Inc.

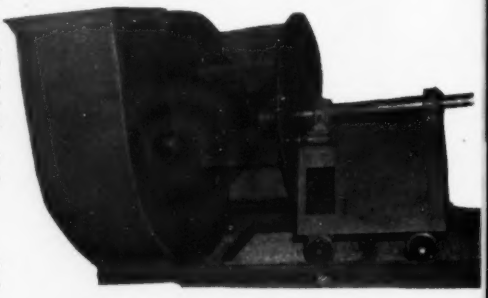
This new line includes double and triple gear reduction units. Motor capacities are rated from 1 to 10 HP.

By moving the shift lever on the Gearshift Drive into one of four positions, four different output shaft RPM's are obtainable on the Gear Reducer.

By using a two speed motor in the Gearshift Drive, eight different speeds are obtained on the Gear Reducer output shaft.

Standard electrical characteristics of the new Gear Reducer combination are: Constant-torque, 3 or 2 phase, 60 cycle, 208, 220/440 or 550 volts. Special voltage and frequencies along with mechanical modifications are available. If required, it is possible to furnish constant-horsepower output in all four speeds with selection of proper gear reducer.

For complete information, circle number 4 on CF's Information Service Card, page 51.



New-Type Fan

A completely new line of fans made especially for the fertilizer industry have been introduced by "FESCO". These fans feature a rubber mounted inboard bearing that eliminates vibration that otherwise would be transmitted to the frame by build-up of material on the fan blades.

The whole fan pedestal and motor mount rolls out on ball bearing wheels to give easy access for cleaning when necessary. 36", 48" and 60" blade diameters are offered with capacities up to 40,000 c.f.m.

For further details, circle Number 5 on CF's Information Service Card, page 51.

For Fluid Proportioning

B-I-F Industries, Inc., of Providence, R. I., announces a new bulletin describing the use and application of the improved Model 1140 Proportioneers Adjust-O-Feeder designed for chemical and industrial fluid proportioning over a wide range of capacities and pressures. Available in either Simplex or Duplex styles and with the desirable stroke adjustment in motion feature, the Adjust-O-Feeder features compact pump design, minimum maintenance, maximum application flexibility, and economical chemical proportioning.

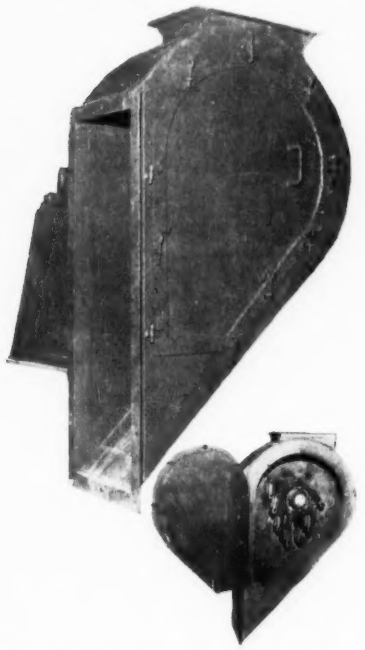
The black and white, four page bulletin features explanatory text, photographs, and cutaways showing the new fluid end construction and exclusive Vane Guide® check valves. Also included is a detailed capacity chart with pressure ratings, and specifications and dimensions, which permit rapid selection of the correct pump for the viscosity of fluid to be proportioned. It lists the viscosity in centipoises from 15 to 5000, the desirable strokes per minute for that viscosity, capacity per cylinder in GPH, maximum working pressure and the desirable motor Horsepower.

For your free copy of Bulletin Rev. No. 1140.20A-1, circle number 6 on CF's Information Sservice Card, page 51.

Equipment News . . .

Impact-Type Breaker

A new impact-type breaker designed primarily for fertilizer operation is offered by "FESCO." The breaker features a design that allows a large door for easy cleaning.



The inboard bearing is mounted on rubber to prevent vibration from being transmitted to the frame and to relieve radial load on the bearing.

Standard A-11 "Z-Metal" chain links are used for breakers to provide a maximum of effective hard breaking area and minimum replacement cost. Hammer velocity can be high enough to give effective breaking down to 8-mesh. A floor mounted model as well as the elevator mounted model shown is available.

For complete information, circle Number 7 on CF's Information Service Card, page 51.

Package Handling Conveyors

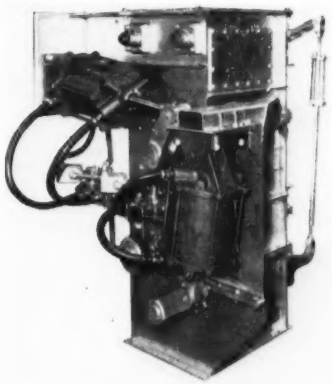
Useful detailed information on Oliver-Farquhar Models 540 and 610, light-duty, power belt conveyors is now available in two separate, 2-color, illustrated bulletins. These new bulletins have just been issued by the conveyor department, The Oliver Corporation, A. B. Farquhar Division, York, Pa.

Bulletin 540 includes descriptive line drawings and complete specifications on the Oliver-Farquhar Model 540 roller bed Package Handling Conveyor. This unit has been engineered for application flexibility and is available in various combinations of widths and roller spacings. Bulletin 610 gives complete construction details and specifications for the Oliver-Farquhar Model 610 slider bed power belt conveyor. This floor conveyor is available in trough or table type and is especially suited for handling jobs on assembly lines or where light loads are moved within or between departments.

For your free copy of these new bulletins on Oliver-Farquhar Models 540 and 610, circle number 8 on CF's Information Service Card, page 51.

Soil Sampler

The Hoffer Soil Sampler, manufactured by Elano Corp., is extensively used and has been especially well received by agronomists. While it was originally developed as a soil sampler it is now being used around trees and shrubs as a fertilizing tool. After the removal of the first core the feeding is accomplished by pouring a mixture of sand and fertilizer down into the hole. For free illustrated folder circle number 9 on CF's Information Service Card, page 51.



Gate Lock

A new pressure gate lock will be a special feature of the powerful pneumatic conveyor system now being installed at Central Farmers Fertilizer Co.'s new plant, Montpelier, Idaho. The lock will permit the pressure-type conveyor system to move phosphate rock both to and from a surge bin used in process.

First of its kind, the lock is unique in that it operates under positive pressure. It was specially engineered by the system designer, Dracco Division of Fuller Co., to handle material at 20 tons per hour despite 15 pounds positive pressure above the gates.

The new lock is equipped with special air cylinders which close the gates and hold against the downward pressure after a predetermined amount of material has been transferred from the conveyor system receiver, through the lock and into the bin. The bin subsequently discharges its contents back into the conveyor system for further processing. For full information circle number 10 on CF's Information Service Card, page 51.

Polyethylene Test Tube Racks

To eliminate the expense and annoyance of continually replacing

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3-59

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Equipment News . . .

broken and scratched test tubes, longer lasting, safe and attractive polyethylene test tube racks are now being distributed by the Gen-

eral Scientific Equipment Company.

Constructed of the finest polyethylene available, these unbreakable, lightweight, chemically resistent racks come in a variety of sizes to meet every laboratory need.

Full information is available by circling Number 11 on CF's Information Service Card, page 51.

Moisture Tester

With the new Ohaus Model #6000 Moisture Determination Balance the moisture content of a wide variety of materials can be determined rapidly, simply, and accurately. The high degree of accuracy of plus or minus 0.1% and the speed of testing over older methods makes this instrument an invaluable addition to the laboratory or manufacturing control point where such determinations are made on chemicals and fertilizers.

This is a completely self-contained unit comprising a magnetically damped analytical-type chain balance as the weighing system, combined with an infra-red heating element which provides even concentrated heat to the sample in a specially designed heating chamber. In use, the sample of material is placed on a lost-cost disposable aluminum foil pan, heated and dried, and by setting a single dial the amount of moisture can be read directly at any time during the adjustable pre-set time cycle. The output of the 650 watt infra-red heater can be infinitely controlled and its distance from the sample can be adjusted from ⅛" to 1¾". The stabilized pan enables this balance to be used with liquids as well as solid and pulverized materials.

In addition to moisture determination, this balance can be used for direct weighing up to 10.0 grams with a sensitivity of 10 milligrams.

For more information circle number 12 on CF's Information Service Card, page 51.

Lime, Fertilizer Spreader

New literature on the low-cost Challenger lime and fertilizer spreader is now being made available without charge through the manufacturers, Highway Equipment Company, Cedar Rapids, Iowa.

The Challenger is a positive feed, self-unloading lime and fertilizer spreader which offers either a single spinner with an 18-inch conveyor or twin spinners with a 24-inch conveyor. For complete literature circle number 13 on CF's Information Service Card, page 51.

TVA Licenses 176 Private Companies

TVA reports that 42 licenses were issued during 1958 to private industry to use TVA fertilizer processes or to manufacture and sell equipment, bringing the total number of such licenses outstanding to 176, and the number of firms using the processes or building the equipment to 143. These companies are located in 37 states.

The TVA development most widely used so far is a process for the continuous ammoniation and granulation of high-analysis fertilizers.

About two-thirds of the three to four million tons of granular fertilizer made in the United States is produced by the TVA process.

Another development of value to the industry, TVA reports, is the continuous superphosphate fertilizer mixer, which produces superphosphate more cheaply and more quickly than other equipment.

TVA said that licensing arrangements with industry also have been made for the use of designs for electric phosphorus furnaces and phosphoric acid units, methods for making high analysis liquid fertilizers, a process for producing lightweight aggregate from byproducts slag, and several other deevlopments. About half of the electric phosphorus furnaces built in the country during the past 10 years were based on TVA designs.

Sound-Slide Film On Molybdenum

The story of the trace element molybdenum is portrayed in a new sound-slide film produced by Climax Molybdenum Company and available for presentation before agricultural and farm groups.

Presented in a combination of photographs and lively cartoon art, the film points out how molybdenum can spell the difference between crops of high yield and quality and those of low or average harvest and health. It shows in detail the way molybdenum works in the system of plants and how to treat needy crops with the element. The film highlights an important new method of application whereby seed is treated before planting.

Called "Moly-Gro Means Money", the film is in color, runs 15 minutes, can be used on either automatic or manually-operated sound-slide film projectors. It can be obtained on loan from: Climax Molybdenum Company; Division of American Metal Climax, Inc., 500 Fifth Avenue, New York 36, N. Y.

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Information Service Bureau

Commercial Fertilizer and Plant Food Industry

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Bulletin 2510 illustrates and describes in pictures and text the proper relationship between:

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2. Location and contours of the pile of material.
3. Position of the holding and closing drums in the crane trolley.

Users report amazing increases in cable life as well as improved bucket performance as a result of applying these practical suggestions. A copy of Bulletin 2510 is yours without obligation. Write for a copy today.

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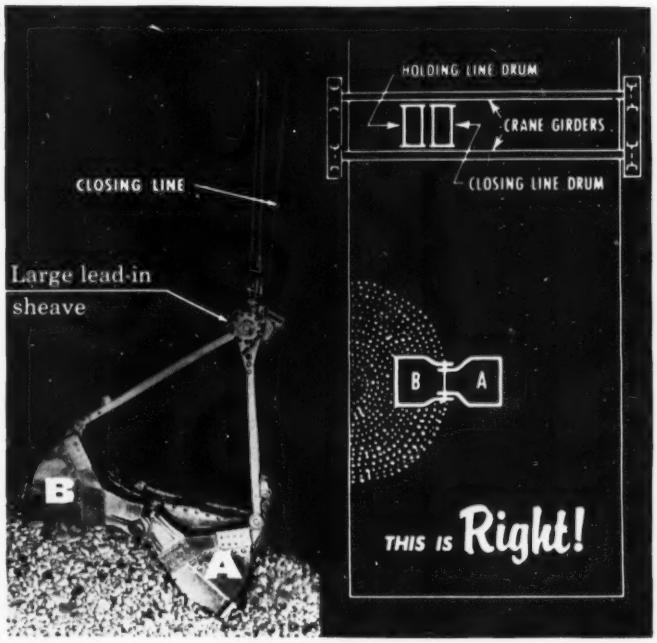
Blaw-Knox Equipment Division
Pittsburgh 38, Pennsylvania



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- Heat treated cutting tip and tube that resists blunting, bending or twisting.
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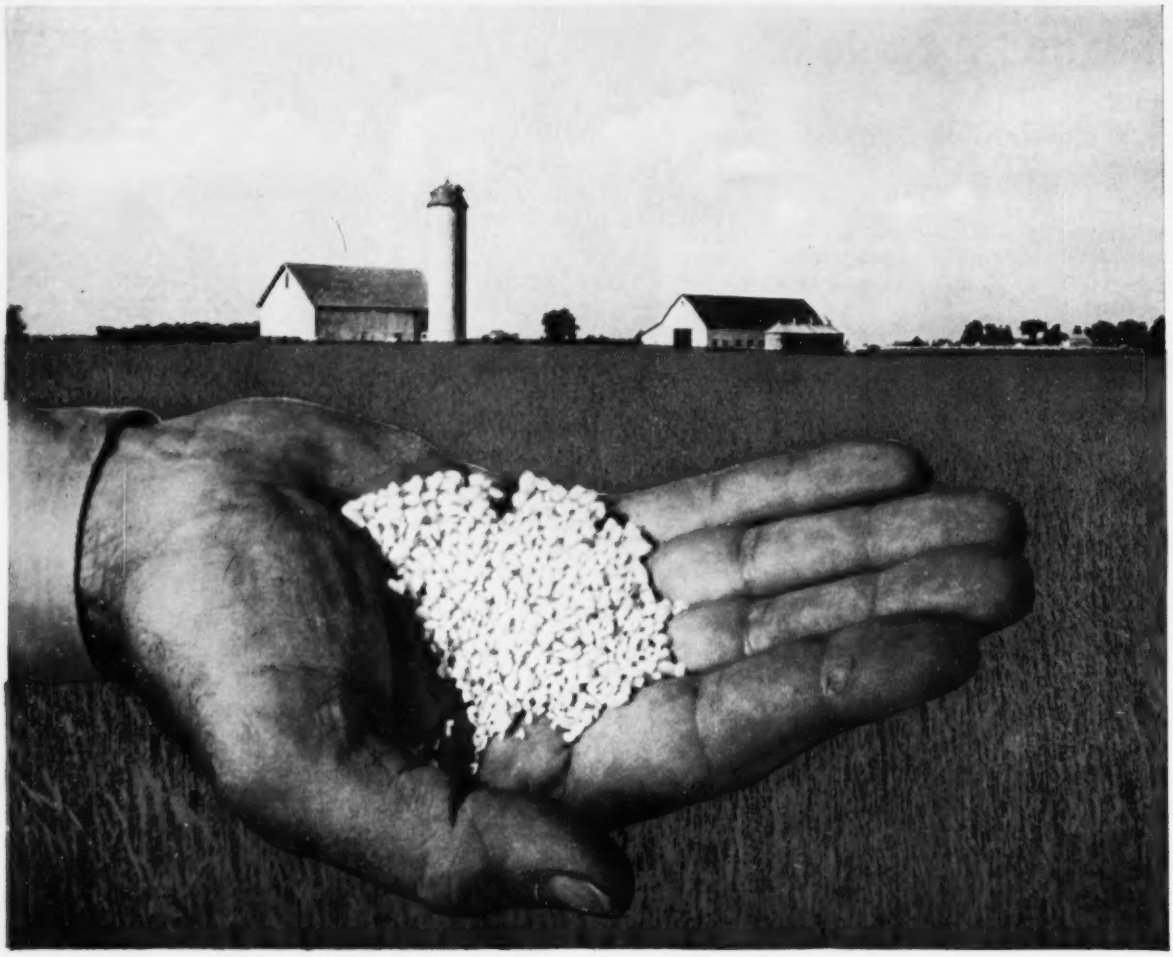
- Special polished, triple-plated surface that resists rust, is easy to use and easy to clean.

Sampler also makes a handy spring to fall planting tool. Send order today or write for descriptive literature. Only $3.95 each. Discounts for quantity orders.

ELANO Corporation
Xenia, Ohio

Advertisements like this in full color are appearing every month during the fertilizer season in Farm Journal, Farm & Ranch, Progressive Farmer, and Capper's Farmer.



Hi-D®...the only ammonium nitrate that's granular!

the helping hand that boosts your yield

Give your land the helping hand of Hi-D. See for yourself why Hi-D is better than any other ammonium nitrate.

Hi-D handles so well—in storage and in spreading. *Only Hi-D is granular.* High in density, Hi-D is super dry—has less tendency to pick up moisture prior to application even under humid field conditions. Result: Hi-D always flows freely—doesn't gum-up—won't clog, cake or bridge in the spreader. And still another advantage, you can get up to 20% more ammonium nitrate in the hopper to reduce loading stops.

Hi-D contains 33.5% of available nitrogen. This crop-boosting nitrogen comes in two equal "servings"—your crops get half *nitrate* nitrogen for vigorous early growth and half *ammonia* nitrogen for sustained follow-up feeding.

This year, let Hi-D help boost your yield. but remember—sound management calls first for soil testing, a liming program if needed, and the necessary balanced mixed fertilizer. Then, a supplementary feeding of nitrogen—the heart of the harvest. Make it Hi-D ammonium nitrate . . . see your dealer.

THE BEST SOLID NITROGEN!

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PROMINENT FERTILIZER MEN QUOTE "FULL ORBIT" VALUE

Reports by participants on the series of fertilizer sales training meetings sponsored by International Minerals & Chemical Corporation stamp the program as a major success.

The general verdict came from 156 fertilizer manufacturing companies which sent representatives to the nine meetings conducted by International in eight cities starting January 5.

The regional meetings were part of a "Full Orbit" sales service program launched by IMC last year to help fertilizer manufacturers sell more of their products and reported here as the program developed.

Participants hailed the program as a welcome step. The stress on the need to sell quality rather than price drew unanimous praise, and other comments centered on attention to fundamentals, timeliness of the topics, and the organization and presentation of the material.

Stanley Hackett, president, **Dixie Fertilizer Company** of Shreveport, said:

"This type of meeting should be expanded so everyone gets a chance to attend. I know it's primarily for salesmen, but I got a lot of good out of it as a company president. I hope it's put on again so more people can attend."

T. H. Golson of Montgomery, Ala., covering that territory for **Wesson Oil & Snowdrift Company,** said the Birmingham meeting covered "good, sound fundamentals . . . it brought back some of the things we might have known but have quit using . . . and it gives us something to think about besides price."

Other comments from the opener in Birmingham and other meetings:

Joseph Stobaugh, Southern Cotton Oil Company, Little Rock, Ark.: "Most rewarding to our group. It reminded us of some places we may have slipped in our selling, and it shows the need of stressing product quality."

Albert D. Graham, president of **A. D. Graham & Co.,** Somerset, Pa.: "Very worthwhile. If the meeting is held again, all my salesmen will attend at my personal expense."

Ed Reeder, Producers Supply, Inc., Palmetto, Fla.: " . . . by far the most helpful selling program in which I have been a participant."

William Angstadt, Reading Bone Fertilizer Company, Reading, Pa.: " . . . might revolutionize the fertilizer industry as far as marketing and merchandising is concerned."

Archie T. Edwards, Red Star Fertilizer, Sulphur Springs, Texas: " . . . pleasantly surprised by the number of good ideas and principles covered."

Les Engler, Commonwealth Fertilizer Company, Russellville, Ky.: " . . . very profitable . . and stimulating."

R. G. Dozier, Dawson Cotton Oil Company, Dawson, Ga.: "Educational and constructive . . . got a lot out of it."

1. Thomas M. Ware (center) president of International Minerals & Chemical Corp., reviews "Full Orbit" fertilizer sales and services with (left to right) N. T. Taylor, Wedgeworth's, Inc., Belle Glade, Fla.; J. C. "Corky" Wolf, Lyons Fertilizer Co., Tampa, Fla.; Howard Thullbery, Superior Fertilizer & Chemical Co., Tampa, and M. S. Malone of Atlanta, district sales manager of IMC's Potash Division. This meeting in Tampa was one of the nine sponsored by International which drew some 350 sales representatives from 156 companies. Two-day meetings covered basics of selling as applied to fertilizer industry; subjects were chosen by manufacturers in industry-wide survey.

2. E. L. Johnston (left) and A. G. Capps (center) both of Associated Co-Ops, Inc., Sheffield, Ala., go over latest sales methods and services in the fertilizer industry with Neal Schenet, manager of merchandising for International Minerals & Chemical Corp., at a two-day meeting in Birmingham, Ala. Schenet was moderator of the nine regional meetings.

3. Stanley Hackett (center) president of Dixie Fertilizer Co., Shreveport, La., reviews some pointers on discovering sales prospects with Jack K. Lindsey (left) Shreveport district manager in International Minerals & Chemical Corp.'s Potash Division, and F. A. Horton, also of Dixie Fertilizer.

4. William Lust (right) of Tyler Fertilizer Co., Tyler, Texas, goes over list of potential sources of business with Hal Hoffman of International Minerals & Chemical Corp., at sales training clinic in Shreveport, La.

5. Brushing Up—Ray Reeves (left) of Pittsburg Fertilizer Co., Pittsburg, Texas, goes over latest sales methods and services in the fertilizer industry with Hal Hoffman of International Minerals & Chemical Corp., at Shreveport clinic.

6. Pencils fly as fertilizer salesmen note selling tips at Birmingham. Left to right, Clyde Wyatt, Sylacauga Fertilizer Co., Sylacauga, Ala.; Herman Young and Jack Smith, C. O. Davis Guano Co., Moultrie, Ga.; and R. G. Dozier, Dawson Cotton Oil Co., Dawson, Ga.

As our readers know full Orbit service started last summer with distribution by IMC representatives of six manuals. These covered insurance needs, use of credit, advertising, building a sales staff, market analysis, dealer meetings, transportation, and technical service.

But manufacturers indicated a desire for further help, and at their request, IMC scheduled the regional

training meetings, which are unusual in the raw materials business. Success of the clinics was partly due to the fact that the companies themselves, in an IMC survey, picked the topics they wanted to learn about.

Using down-to-earth principles aimed specifically toward the fertilizer industry, the International task force nailed down such subjects as prospecting for sales, the right approach, overcoming objections, closing, effective use of selling time, advertising and sales aids.

The talk on effective use of selling time drew a 25-minute discussion at one meeting. Participants at the sessions were told to break in with questions or comments at any point.

Specific steps by which a fertilizer salesman can determine the potential of his territory were outlined. Another topic stressed that objections, when anticipated, can be turned into sales.

Colored slides, blackboard, and flip charts were used to pound home key points. The four-man teams drew on the background of IMC's 50 year history as well as an extensive research and sales service staff to come up with its compact, documented, and well illustrated clinic. "It was a pleasant surprise," said one participant, "to find no sales pitch, no frothy generalities, and no wasted time."

Companies came from distances of more than 300 miles to attend the meetings, which were moderated by Neal Schenet, IMC's manager of merchandising. The full program schedule listed meetings in Birmingham, Ala.; Shreveport, La.; Tampa; Columbia, S. C.; Baltimore (two meetings); Cincinnati; Des Moines, Iowa., and at IMC headquarters in Skokie, Ill.

Off-farm income now accounts for about one-third of farmers' total net income, reports the U. S. Department of Agriculture.

USDA Asks: Have Co-Op Memberships Hit The Peak?

The Department of Agriculture issued a 1956-57 review of farm cooperatives which frankly stated that with the decline in the number of farms, the number of farmer co-op memberships may have passed their peak. Yet that same report shows a total net business for the cooperatives of $10,359,309,000. And ten Billion is a lot of money . . . up $640,000,000 from the previous year.

This total was made up of many commodities, with fertilizer contributing some $275,000,000 to the sum; standing number three, after feed and petroleum products in the farm supply category.

But to get back to that membership situation. While the number of co-ops remained about level (some new, some consolidations, some old folding up) the memberships dropped from 7,730,710 to 7,671,730.

With figures like these it is entirely understandable that Secretary Anderson's recent tax proposal should not be met with enthusiasm, to put it mildly, by such as Jerry Voorhis, who directs to Cooperative League. For the Treasury man suggests the tax-free retention of income should be limited to 3 years. This would, apparently, seriously handicap the expansion of multi-million dollar co-op owned basic raw material plants and such items as potash mining areas.

For the geography of the co-op here is the compiliation by states of 9,872 co-ops in the US as of 1956-57:

Estimated number of cooperative memberships, and business of cooperatives, by States, 1956-57[1]

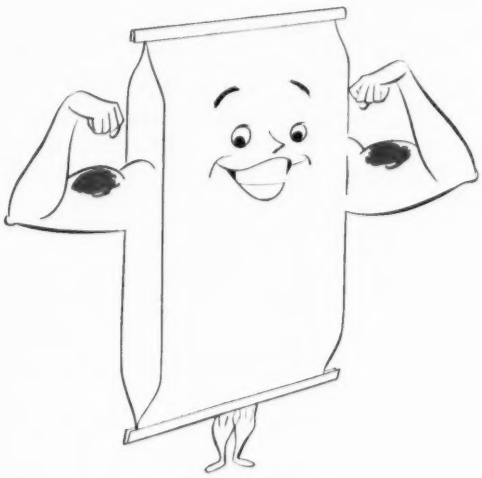
State	Number of memberships in State	Net business after adjusting for duplication[2] $1,000
Maine	23,755	42,048
New Hampshire	8,850	23,354
Vermont	21,610	75,473
Massachusetts	27,000	65,909
Rhode Island	3,890	9,086
Connecticut	17,045	51,780
New England	**102,150**	**267,650**
New York	169,590	524,085
New Jersey	36,430	147,330
Pennsylvania	178,700	345,989
Middle Atlantic	**384,720**	**1,017,404**
Ohio	375,870	555,437
Indiana	418,945	401,466
Illinois	552,180	638,346
Michigan	207,940	334,163
Wisconsin	404,500	565,882
East North Central	**1,959,435**	**2,495,294**
Minnesota	569,110	711,304
Iowa	408,370	564,244
Missouri	450,240	311,748
North Dakota	256,725	274,611
South Dakota	167,665	156,599
Nebraska	260,255	277,524
Kansas	197,280	265,824
West North Central	**2,309,615**	**2,561,854**
Delaware	26,535	27,544
Maryland	95,940	96,952
District of Columbia	—	—
Virginia	252,860	155,528
West Virginia	73,925	39,892
North Carolina	413,575	159,205
South Carolina	62,960	35,112
Georgia	169,835	77,895
Florida	40,300	170,979
South Atlantic	**1,135,930**	**763,107**
Kentucky	232,830	152,152
Tennessee	259,035	73,467
Alabama	85,395	44,849
Mississippi	133,100	167,323
East South Central	**710,360**	**437,791**
Arkansas	81,140	117,868
Louisiana	24,350	43,047
Oklahoma	174,600	151,250
Texas	180,170	446,823
West South Central	**460,260**	**758,988**
Montana	59,020	94,150
Idaho	56,425	96,026
Wyoming	11,420	18,579
Colorado	62,385	135,321
New Mexico	10,425	27,905
Arizona	61,855	47,604
Utah	31,305	89,282
Nevada	400	3,217
Mountain	**293,235**	**512,084**
Washington	118,620	300,528
Oregon	67,525	178,084
California	129,880	1,066,525
Pacific	**316,025**	**1,545,137**
United States	**7,671,730**	**10,359,309**

[1] Preliminary.

[2] Does not include business between cooperatives.

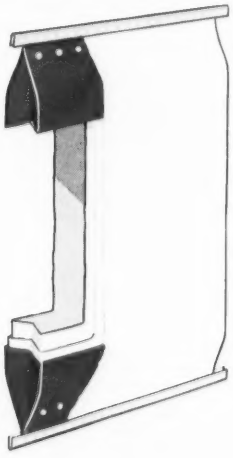
USDA 257-59

Need a little added bag muscle? Bemis Strength-End Multiwalls give it ... *ECONOMICALLY*



Could your multiwalls use a little more muscle on jobs for which they may now be a trifle light? Are you getting breakage . . . and complaints?

There's no need to add a whole ply to your multiwalls and boost your cost appreciably. You can save money . . . and get the strength you need . . . by using job-tested Bemis Strength-End Multiwalls, with added strength top and bottom, where most sewn-bag breakage occurs.



Or maybe your problem is that you're somewhat OVERpackaged. You could eliminate a full ply and, in its place, use Strength-End protection. And save *that* way.

Bemis Strength-End Multiwalls have been successfully used in all sections of the country and under all climatic conditions.

Ask your Bemis Man for the complete story . . . and examine the bag yourself. You'll quickly see its common-sense, balanced-strength construction . . . the solution to many problems of underpackaging and overpackaging.

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PEOPLE in the Industry

VELSICOL

Roger Roth, sales manager of **Velsicol Chemical Corporation's** agricultural chemicals division, has announced the appointment of **Harry Sidles** to the post of assistant sales manager of the agricultural division. Mr. Sidles was formerly with **Rohm & Haas** Company where he was responsible for nationwide sales of agricultural chemicals.

AP&C

William M. Niven has joined **American Potash & Chemical Corporation** as export manager, according to an announcement by **A. J. Dirksen,** eastern general sales manager.

Mr. Niven, who will headquarter at the company's New York offices, previously was export manager and assistant treasurer of **Internatio-Rotterdam, Inc.,** in New York from 1947 until his present affiliation with American Potash & Chemical Corporation.

SINGMASTER & BREYER

The appointment of **James V. Roy** as sales manager has been announced by **Singmaster & Breyer, Inc.,** New York chemical and metallurgical engineering affiliate of the **Fluor Corporation, Ltd.,** of Los Angeles.

Mr. Roy, a graduate chemical engineer and former sales engineer for **Blaw-Knox Company,** was project engineer for Singmaster & Breyer on a Boron-10 isotope plant designed for the Atomic Energy Commission, and on a chlorinated hydrocarbon plant for **Stauffer Chemical Company.**

HUDSON

The Multiwall Division of Hudson Pulp & Paper Corporation announces the appointment of **Philip D. Kent** as district manager for the Chicago territory. A native Chicagoan, Mr. Kent graduated from DePaul University, subsequently serving in the U. S. Navy throughout World War II. Prior to joining Hudson he had had wide experience in sales and sales research in specialty papers for industrial use.

Kent

CSC

At a meeting of the board of directors of the **Commercial Solven's Corporation, J. Albert Woods** resigned as president and director of the Corporation. He will continue to serve the company in a consultative capacity until the end of 1962.

Maynard C. Wheeler who is senior vice president and who has been a member of the board of directors of the company since 1950 was elected acting president.

In announcing Mr. Woods' resignation, the Board of Directors of the Corporation issued the following statement:

"We have today received, with great regret, the resignation of Mr. J. Albert Woods as President and Director of this Corporation. He has served this Corporation with utmost devotion as a Director since 1949, and as President since 1950, and has earned the warm regard of his colleagues on this Board. We join in expressing to him our deep appreciation for the services he has rendered to the Corporation throughout that period and are gratified that his advice and counsel will be available to the Corporation, on a consulting basis, in the future."

Mr. Woods explained that he resigned as a result of differences of opinion between himself and major stockholders of the corporation including the Milbank interests.

In addition to Mr. Woods, three Directors whose terms expire this year have announced that they are not candidates for re-election. They are **William E. S. Griswold, Sr., Henry V. B. Smith,** and **James A. McConnell.**

At the board meeting, the directors nominated **Paul V. Shields, H. V. Sherrill,** partners of Shields & Company, investment bankers; **Arthur E. Palmer, Jr.,** partner of Winthrop, Stinson, Putnam & Roberts, attorneys; **Jeremiah Milbank, Jr.;** and **William W. Burch,** financial adviser to the Milbank interests, to serve as directors for the three year term ending 1962.

US STEEL

Dr. Murray McJunkin, U. S. Steel, has become president of the Pennsylvania Plant Food Educational Society.

Joe C. Brady (left), general manager of **Delta Fertilizer Company** and **Helena Cotton Oil Company,** Helena, Arkansas, welcomes **A. L. McQuary** into the position as manager of Delta Fertilizer Company. Mr. McQuary was previously with Planters Gin Company, Altheimer, Arkansas.

Mr. McQuary is taking over the position that was held by **F. L. Enlow,** who passed away in late December.

USI

Clifford E. Oman has been appointed Tuscola general manager for **U. S. Industrial Chemicals Co.,** division of **National Distillers and Chemical Corporation,** it was announced by **Robert H. Cornwell,** production vice president. In his new position, Mr. Oman assumes responsibility for operations at the giant petrochemical plant-complex at Tuscola, Illinois.

BEMIS BRO.

R. E. Hartig, manager of the **Bemis Bro. Bag Company's** Flemington, N. J. plant, has been transferred to the product development unit of the general sales department, St. Louis. **P. J. Ferree,** superintendent of the company's Houston plant, has been named to succeed Mr. Hartig as plant manager at Flemington. The appointments are effective immediately.

Bemis has announced the recent appointment of **Raymond A. Parr** as a representative in the company's product development unit. His duties will involve development of new uses for company products.

Three new directors were elected at the annual meeting of stockholders held at the company's St. Louis General Offices, February 5.

Elected directors were **A. N. Weeks,** vice-president and director of production, St. Louis General Offices; **R. V. Scott,** director of Eastern operations, New York; and **C. W. Akin,** director of group six op-

erations, Minneapolis.

The new vice-presidents were elected at the meeting of the board of directors which followed the stockholders' meeting. Elected officers were **T. H. Ashton,** director of Central operations, Omaha; **L. A. Linville,** director of western operations, **San Maeto, Calif.;** and **H. J. Wehrenbrecht,** director of Southern operations, New Orleans.

W. VA. PULP & PAPER

Alfred W. Arenander, Jr., purchasing agent for **West Virginia Pulp and Paper Company** since 1942, has been promoted to manager of trade relations, a newly-created position, it was announced by **John D. Cowan,** executive vice-president.

He will be succeeded as purchasing agent by **William F. Merrilees,** purchasing agent of the company's Kraft division at Charleston, S. C.

Both appointments are effective March 1.

US POTASH

Vice-president **John E. Fletcher** announces the appointment of **L. Ralph Boynton** as sales manager, **United States Potash Company Division** of **U. S. Borax & Chemical Corporation,** effective March 1, 1959. Mr. Boynton joined United States Potash in 1940 as a sales representative in its Southeastern territory.

Boynton

On October 1, 1955, Mr. Boynton was appointed Southern sales manager, with headquarters in the company's Atlanta office, and on October 2, 1956, was transferred to the New York office as assistant sales manager of the Potash division.

STURTEVANT

Alfred T. Glynn, 61, has been named chief engineer of **Sturtevant Mill Company,** Dorchester, Mass., filling the post vacated last October by the death of **Edward Ingle.** Mr. Glynn had served as Interim Chief Engineer prior to his appointment in January. He joined Sturtevant in 1916, directly from high school.

SPENCER

Spencer Chemical Company has announced the election of **William H. Jackson** of New York City and Princeton, N. J., to the company's board of directors. Mr. Jackson will fill a vacancy on the Spencer board created by the resignation of **James F. Brownlee,** also of New York. Mr. Jackson has previously served for six years as a Spencer director.

AMERICAN AG CHEMICAL

The American Agricultural Chemical Company announces two changes in its board of directors, with the retirement from the board of **George H. Fick** and **Arnold W. Cramer.**

John A. Marsh, vice president, **The International Nickel Company, Inc.,** and **W. H. Hildebrandt,** comptroller, The American Agricultural Chemical Company, were elected to replace the two retired directors.

SOHIO CHEMICAL

Edward F. Morrill has been elected a vice president of **The Standard Oil Company** (Ohio), it was announced by **Charles E. Spahr,** president, following a meeting of the board of directors.

Mr. Morrill is president of **Sohio Chemical Company,** a wholly-owned subsidiary. In 1954 Mr. Morrill assumed responsibility for the construction of Sohio's petrochemical manufacturing plant at Lima, Ohio. He now heads Sohio's petrochemical operations.

MONSANTO

William B. Toulouse became Monsanto Chemical Company's corporate advertising manager December 15, it was announced by **William R. Farrell,** director of the advertising department.

At the same time, **James E. Crawford Jr.,** director of marketing for the company's Inorganic Chemicals division, announced that **Charles L. Grisham,** now assistant advertising manager for the company's Organic Chemicals division, will succeed Mr. Toulouse as Inorganic Chemicals division advertising manager.

Mr. Toulouse will succeed **H. C. Holmes** who has resigned.

Frank W. Rodgers, a member of the Chicago sales staff of Monsanto Chemical Company's Inorganic Chemicals division, has been promoted to assistant manager of the Chicago district.

QUAKER OATS

The appointment of **J. J. Howe** as Eastern district sales manager for the Chemicals Division has been announced by **The Quaker Oats Company.** He joined Quaker Oats in 1947.

V-C

Preston L. Parrish, assistant manager of **Virginia-Carolina Chemical Corporation's** purchasing department, became sales manager for inorganic chemicals February 1.

Frank M. Watson, Jr., senior buyer, moved up to succeed Mr. Parrish as assistant manager.

GLF

Merrills Dake, lime purchasing supervisor for **Cooperative G.L.F. Exchange, Inc., Ithaca,** has been named to direct G.L.F. lime promotion and to provide leadership on lime equipment and maintenance.

The announcement was made by **J. C. Crissey,** G.L.F. soil building division manager, and **Ronald N. Goddard, G.L.F.** sales division manager.

BUELL

Buell Engineering Co., Inc., New York, announces the appointment of **Schaeffer Specht** to its sales staff.

Mr. Specht was formerly assistant sales manager of **Research-Cottrell, Inc. where** he was directly responsible for application of dust collection equipment in the power field, and in the cement, paper, and other processing industries.

Mr. Specht also has previous experience in the chemical and pigment fields as palnt engineer with **C. K. Williams & Company,** and has a number of years of engineering background in the cement industry.

DU PONT NITROGEN

Carl E. Schauble, field representative for **Du Pont Nitrogen Products Sales,** has been assigned to southern Virginia and the Carolinas. He will be based at Charlotte. He replaces **Gene Baenen,** who is now assigned to the industrial chemicals section of Du Pont's Polychemicals department.

YALE MATERIALS

Robert B. Brown, materials handling director of the National Retail Lumber Dealers Association for the past three years, has been named a special field sales representative in the South for Yale industrial lift trucks and tractor shovels by Clyde R. Dean Jr., General Sales Manager, **Yale Materials Handling Division, The Yale & Towne Manufacturing Co.**

US POTASH

William P. Brashear joined the sales organization of **United States Potash** last month. He was formerly with **National Potash.** In close association with **Bill Crady,** he will represent U S Potash division in the Southwestern territory.

Brashear

Ozark-Mahoning

H. E. "Cotton" Graham has joined **Ozark-Mahoning Co.**, Tulsa, Oklahoma, as district representative in the Iowa-Minnesota area. A 10 year veteran in the industry, he is a former board member of both the Oklahoma and the Arkansas Plant Food Societies.

NATIONAL POTASH

Albert F. Rothwell has been elected secretary and treasurer of **National Potash Company, Richard C. Wells, president,** announced. Mr. Rothwell joined National in 1956.

AGRICO

W. H. Mullins, plant foreman at **Agrico's** Seymour, Indiana fertilizer plant, has been named plant superintendent at the recently acquired Agrico plant at Olathe, Kansas, according to **R. M. Richey,** general superintendent, The American Agricultural Chemical Company.

Replacing Mr. Mullins as superintendent at Seymour is **W. K. Stone,** formerly located at the Greensboro, North Carolina, plant.

GILMAN PAPER

Charles Gilman, chairman of the board and chief executive officer of **Gilman Paper Company**, 630 Fifth Avenue, New York City, has announced that **Harold Holden,** presently vice chairman of the board of **Standard Packaging Corporation,** has been elected president and general manager of Gilman Paper Company.

At the request of **R. Carl Chandler,** chairman of the board of Standard Packaging Corporation, Mr. Holden will continue as a director of Standard Packaging Corporation and as a member of its executive committee.

PHILLIPS PETROLEUM

Several appointments have been made to positions in **Phillips Petroleum Company's** foreign sales and development department, which was recently formed with **John Getgood** as manager and with headquarters located at 80 Broadway, New York City.

Frank T. Page is promoted to manager of crude oil and fertilizer sales in the new department and will be responsible for all such sales outside of the United States and Canada. **Albin W. Smith** is promoted to assistant manager of crude oil and fertilizer sales; and **T. R. Holland** is promoted to administrative assistant in the department.

TEXAS GULF SULPHUR

Election of **Hubbard S. Caven** and **A. Nelson Myers** as vice presidents of Texas Gulf Sulphur Company was announced Feb. 24 by **Fred M. Nelson,** chairman.

Mr. Caven has headquarters at the company's office in Houston, Tex. Mr. Myers is manager of sales and operates from the New York office.

COMMERCIAL SOLVENTS

James F. McCarthy has been named manager of the Cleveland district office for **Commercial Solvents Corporation,** it was announced by **James V. O'Leary,** general sales manager. Mr. McCarthy joined CSC in 1953 as an industrial chemicals salesman and has served in Chicago and Indianapolis.

ALABAMA POLY

Dr. E. T. York, Jr., has been made director of extension at **Alabama Polytechnic Institute.** He has been for the past four years Northeastern Director for **American Potash.** He will assume the new duties May 1. **Dr. S. E. Younts,** who has been Dr. York's assistant, will continue his API work. Dr. York succeeds **P. O. Davis,** retiring after 25 years of service.

FUR-AG®

the sterilized organic conditioner

By the bag or by the box car. You can get all the Fur-Ag you want, delivered where you want it, when you want it. Fur-Ag is low in cost and makes a big difference in your mixed fertilizers. It reduces bagset, promotes drillability, speeds up curing in the pile and provides bulk. Fur-Ag is sterilized—free from plant diseases, insects and weed seeds. Its natural dark color lends a rich, sales-inviting look to your finished goods. For full information, write for Bulletin 127.

The Quaker Oats Company

CHEMICALS DIVISION

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Alex. M. McIver & Son

BROKERS

Specializing

SULPHURIC ACID

SULPHUR

GROUND COTTON BUR ASH, 38/42% K_2O Potash

HYNITE TANKAGE

CASTOR POMACE

TUNG POMACE

ORGANIC AMMONIATES

AMMONIATED BASE AND SUPERPHOSPHATE

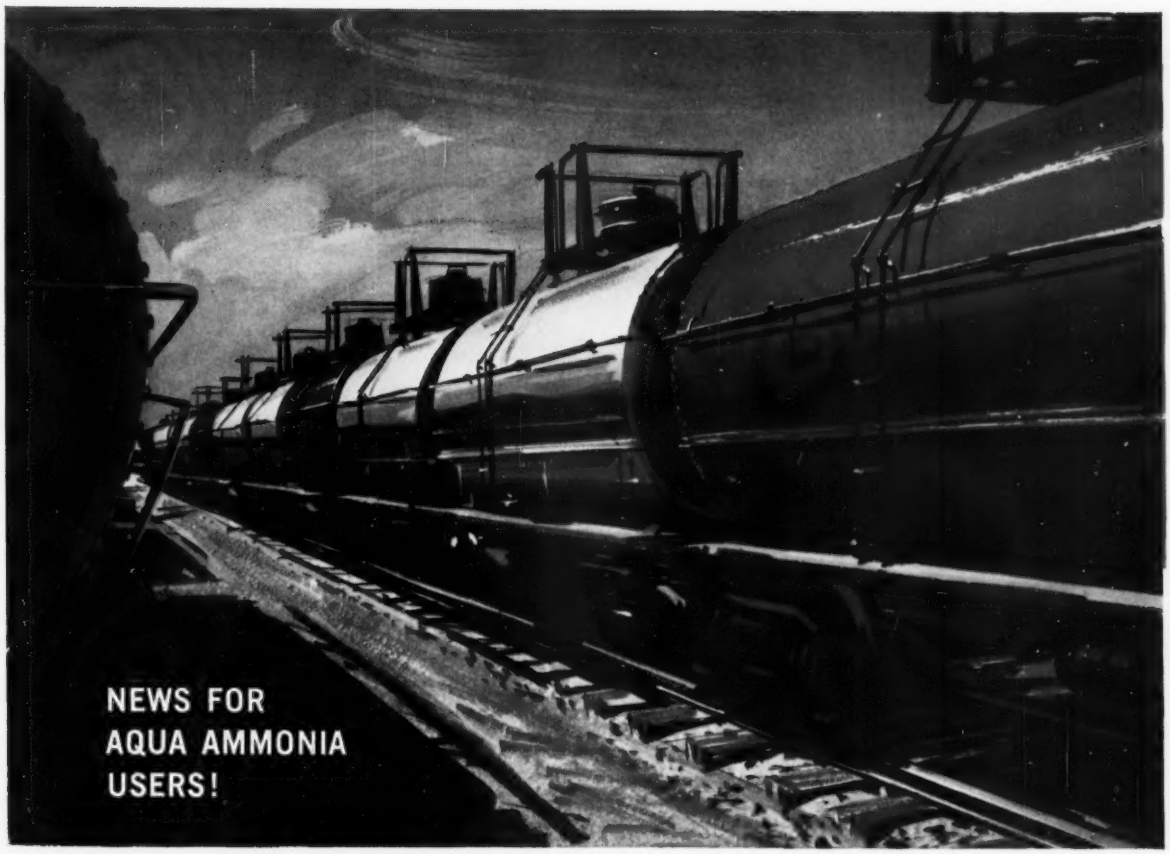
SULPHATE OF AMMONIA
(Kiln Dried 21% N)

COTTONSEED MEAL

BAGS — PAPER & TEXTILE

DOLOMITIC LIME
(42-44% Magnesium Carbonate)
(54-56% Calcium Carbonate)

PETTERSEN BUILDING
Charleston South Carolina
Phones: RA 3-4828 & RA 3-4829



Texaco can save you the freight on 1 car out of 3

NEW 50% SOLUTION GIVES YOU MORE NH_3 PER SHIPMENT

Because Texaco has the handling know-how and equipment, it is now practical to ship aqua ammonia at 50% concentration in either tank cars or tank trucks. You get 57% *more* ammonia than in the same volume of regular 29.4% solution.

At your plant, 50% solution is unloaded and diluted to 29.4% without additional investment in handling equipment.

Thus, two tank cars of Texaco 50% NH_3 solution actually give you more ammonia than three cars of the standard 29.4% solution—saving you shipping costs on one car.

Only Texaco offers you this advantage. In addition, Texaco's technical advisory personnel will be glad to discuss with you any questions concerning this unique saving, development of a new product or improvement of an old one. Possibly Texaco research has already solved a problem similar to yours, saving you the expense of duplicate experimentation.

The box at the left shows you some of the high-quality petrochemicals available from Texaco. Whether you need a product or a process, call or write:

The Texas Company, *Petrochemical Sales Division,* 332 South Michigan Avenue, Chicago 4, Illinois, or 135 East 42nd Street, New York 17, N. Y.

TUNE IN . . . Metropolitan Opera Radio Broadcasts Saturday Afternoons—CBS

TEXACO PETROCHEMICALS: Aqua ammonia, anhydrous ammonia, nitrogen solutions, diisobutylene, odorless mineral spirits, naphthenic acid, propylene tetramer and rust inhibitors.

TEXACO

TEXACO
PETROCHEMICALS

These three safety-minded men from Consumers Cooperative, Kansas City, went on TV recently, in recognition of five years without a lost time accident. They are Macklin Wilkinson, C. P. Perkins and Merle Blue, shown talking to the TV announcer.

Safety Meeting Sets Up Fertilizer Section Objectives

On February 13 the Fertilizer Section National Safety Council held a meeting of its executive committee in Atlanta, Georgia. The National Safety Council was represented by Glenn Griffin.

Among the topics discussed at the meeting were the processing of data sheets regarding the safe handling of pesticides in fertilizer and the possible instruction sheet on the use of scrap material derived from discarded equipment in which liquid materials have been used.

Two main objectives of the Fertilizer Section this year, as brought out by general chairman George Pelton, of Smith Agricultural Chemical Company, include 1) Retaining membership and obtaining new members, and 2) Conducting a Supervisory Training program.

The first objective is being met through the fine efforts of C. S. Griffith, Virginia-Carolina Chemical Corporation and a full discussion was held on the second. Through the cooperation of the Plant Food Institute, represented by Paul Truitt, by providing funds and effective publicity, five regional Fertilizer Safety Schools were held in 1958. Tentative plans call for tentative schedules of schools in 1959, as follows:

1. Northeast, August 12-13; 2. Southeast, August 27-28; 3. Midwest, August (Date to be announced); 4. Southwest, November 12-13; 5. West, (To be announced).

These schools will afford the fertilizer industry a fine opportunity to **sell** supervisors on safety.

The next meeting of the Executive Committee will be held on June 4, at Hotel Roanoke, Roanoke, Virginia.

15 Agrico Plants Set Safety Records

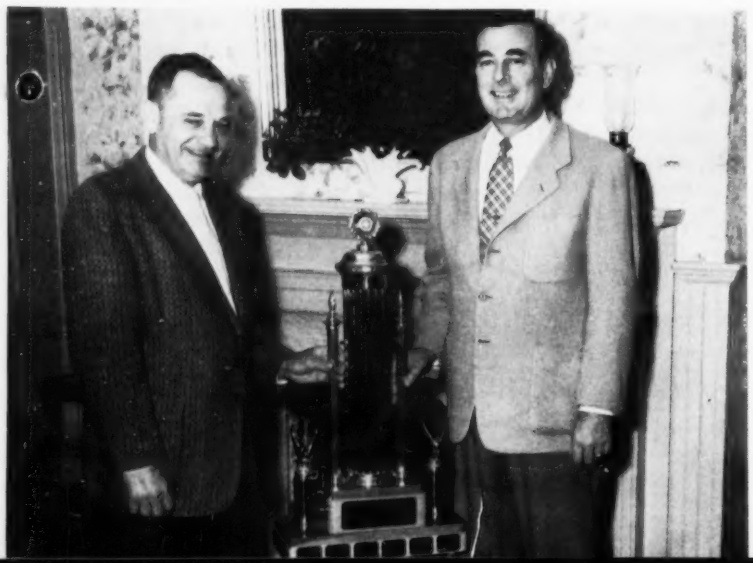
Fifteen of Agrico's 36 plants have received safety certificates covering the calendar year 1958, for completing the year with no lost time injuries, according to G. H. Mueller, safety director for the American Agricultural Chemical Company, manufacturers of Agrico fertilizers.

The Spartanburg, South Carolina, plant, of which J. E. Martin is superintendent, has achieved six consecutive years without a lost time accident. The Henderson, North Carolina, plant, with S. B. Harris as superintendent, has reached the five year mark.

Three other plants—at Cleveland, Ohio; Columbia, South Carolina; and Norfolk, Virginia, have received the award for three consecutive years. The Alexandria, Virginia; Baltimore, Maryland; and Cincinnati, Ohio, plants have achieved two calendar years without a lost time accident.

Other plants that operated for calendar 1958 without a lost time accident are located at Buffalo, New York; Cairo, Ohio; Danville, Illinois; Pensacola, Florida; Port Hope, Ontario; Saginaw, Michigan; and Three Rivers, New York.

General Manager R. M. Wilbur, right, of the Coronet Phosphate Division, accepts the Ralph B. Douglass safety trophy for the third consecutive year from Smith-Douglass Operations Vice-President J. A. Monroe. Twelve Smith-Douglass plants compete for the traveling award, presented annually to the operation with the best safety record. The award will now be retained permanently at Coronet.



Bemis Golden-Ply Acid-Resistant Thread

An improved acid-resistant thread for the manufacture and closure of multiwall and waterproof bags has been developed by the Bemis Bro. Bag Co. Bemis Golden-Ply Acid-Resistant Thread is composed of a combination of cotton and highly acid-resistant synthetic filament yarns.

Golden-Ply is manufactured in a single construction for use both in the needle and looper of the sewing machine. This eliminates the need for separate stocks of thread and prevents inadvertent cross-threading.

Recent experience in manufacture and usage prompted the development of the improved thread. Extensive tests by Bemis' Engineering Department laboratory, its Bemiston Cotton Mill, where the thread is produced, and other company testing departments, indicate the new Golden-Ply thread offers excellent balance of twist, tensile strength up to 16.5 pounds and alkali, as well as acid, resistance.

Sample one-pound cones of Golden-Ply Acid-Resistant Thread are available upon request to Bemis' General Offices, 408 Pine Street, St. Louis 2, Mo.

Nuclear Land Sterilizing Proposed

UCLA is the source of a plan to build a light, portable nuclear reactor, which will roll along killing off weed seeds, nematodes, fungi, and insect pests. This would be an expensive gadget, they admit, but over the long pull of a five-year amortization program it would treat fields at about $70 per acre as compared with present $300 to $500 cost of chemical sterilization.

THE MAN WITH THE MULTIWALL PLAN

UNION PACKAGING SPECIALIST BOB BUCK

lowers customer's bag costs $35,000 annually

A little weight reduction can go a long way in trimming Multiwall costs. Union Packaging Specialist Bob Buck demonstrated just how far during a study of one company's bagging operation.

The company had been using a baler bag of 160# total basis weight. Union's analysis proved that a 70/70 bag would be equally effective. The 20# reduction resulted in a savings of $35,000 a year.

This economy came through Union's 5-Star Packaging Efficiency Plan. Among the other improvements were: (1) A new, revised specifications manual which simplifies and streamlines inventory control. (2) Standardization of all bag printing. This assures delivery of completely uniform print copy from the firm's various suppliers.

Union Multiwall Recommendations are based on this 5-Star Packaging Efficiency Plan

- DESIGN
- EQUIPMENT
- CONSTRUCTION
- SPECIFICATION CONTROL
- PLANT SURVEY

Union's plan is producing thousands of dollars worth of savings for Multiwall users, large and small. It might point the way to a greater return on your packaging investment. Write for details.

Better Multiwall performance through better planning

union camp

UNION'S PACKAGE ENGINEERING DEPARTMENT will study your Multiwall bagging methods and equipment and make appropriate recommendations, regardless of the brand of Multiwalls you are now using.

UNION MULTIWALL BAGS

UNION BAG-CAMP PAPER CORPORATION

233 BROADWAY, NEW YORK 7, N. Y.

Footwear courtesy of Abercrombie & Fitch Company

One pair fits exactly

Just as one kind of footwear fits a special purpose, Sinclair can fit *your* needs for nitrogen products—exactly!

Before you buy, check these points: Does your present supplier offer top quality nitrogen products? Are they readily available even during peak seasons? Moreover, can you get prompt, reliable, low-cost delivery?

Sinclair is in a position to fill all your requirements—exactly. We can speed top quality nitrogen products to you from Hammond, Indiana—the center of the Midwest's transportation system.

Vast storage facilities for anhydrous ammonia and nitrogen solutions assure delivery where and *when* you need it. To solve *your* supply problem, make Sinclair your source!

Anhydrous Ammonia • Ammonium Nitrate Solutions • Aqua Ammonia • Nitrogen Fertilizer Solutions • Aliphatic Solvents • Odorless Solvents • Aromatic Solvents • Heavy Aromatic Solvent • Toluene (Nitration Grade) • Xylene (Five Degree) • *para*-Xylene • Sulfur Sulfonates (Oil Soluble) • Corrosion Inhibitors Lube Oil Additives • High Purity Propylene

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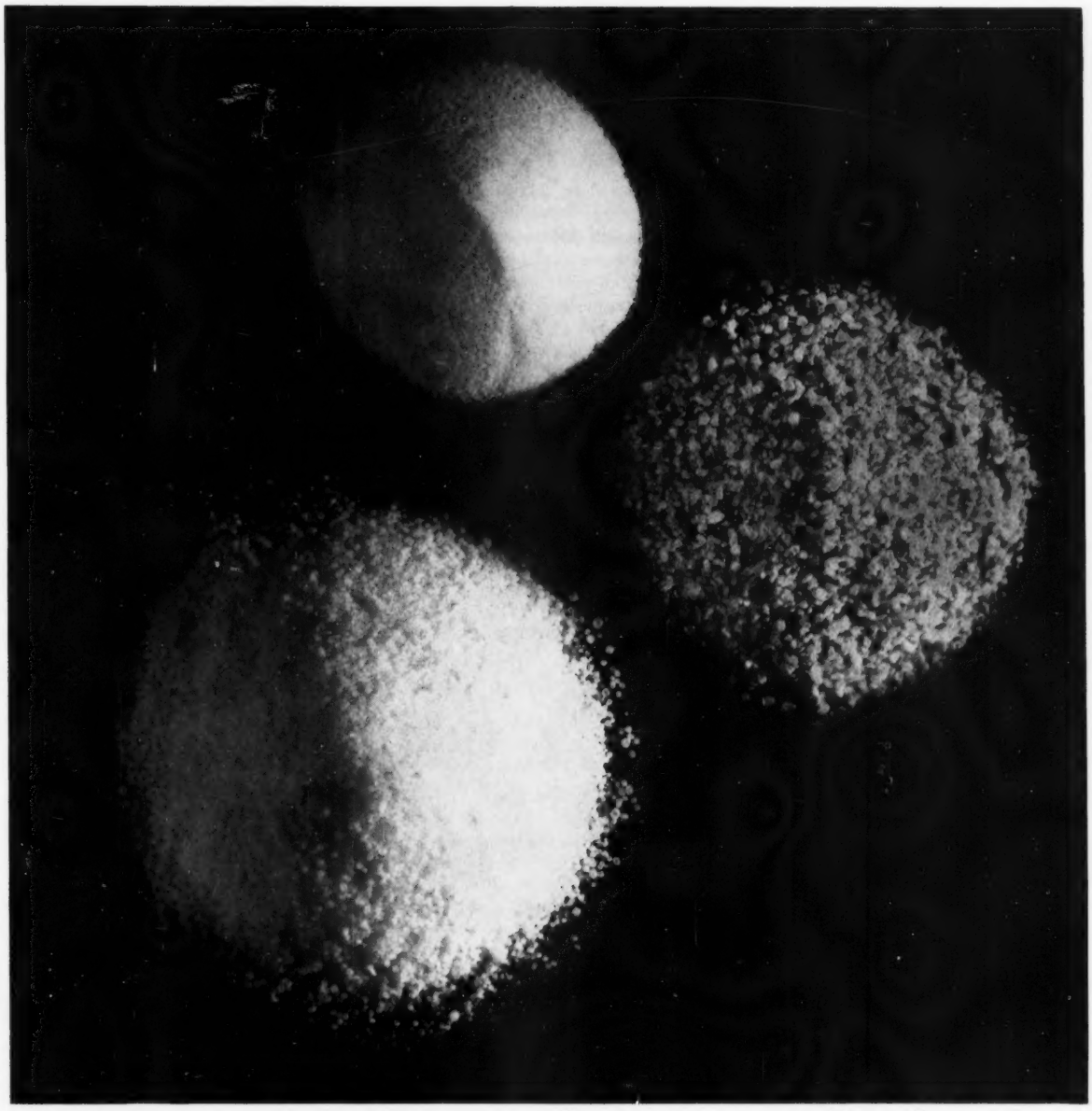
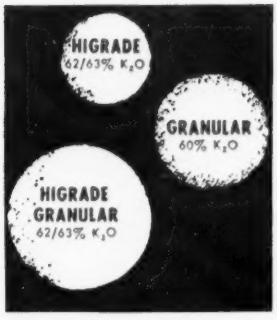


Better fertilizers begin with three grades of specially sized USP potash



To help you make better fertilizers, USP offers *three* outstanding grades of muriate of potash—each ideally sized to meet current fertilizer manufacturing requirements. Two white grades—Higrade muriate and Higrade Granular muriate—each contains 62/63% K_2O, and each gives the most potash per ton for mixed fertilizers. And USP's Granular muriate, containing 60% K_2O, is ideal for fertilizers requiring a still larger particle size. All three grades are specially refined to resist caking and remain free-flowing throughout.

For complete technical data and shipping information, contact the United States Potash Company. Our expertly staffed Technical Service Department welcomes your inquiries.

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DIVISION OF UNITED STATES BORAX & CHEMICAL CORPORATION
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When, where and why does it pay to fertilize trees?

North America has more than 1,000 kinds of trees. Census Bureau figures show that the people of the United States have used more Southern pine lumber than any other species. Year after year the production of Southern pine has constituted about 30 percent of all the lumber cut in the United States.

Pulpmills have discovered many new uses for Southern pine in recent years, including such products as cellophane, photographic film, explosives, plastics and rayon, as well as the countless objects of paper made from pine pulp such as bag paper, building board and package material. Tall oil, a former waste product from pulping pine, now yields large quantities of turpentine, pine oil and other products used in paints, soaps and varnishes.

Under what conditions will it pay to fertilize trees?

That is the basic question prompting a study now beginning at North Carolina State College. The study is being carried on jointly by the college's School of Forestry and its Experiment Station and Allied Chemical Corporation.

Announcement of the research study was made by Dr. Richard J. Preston, dean, School of Forestry, and Dr. R. L. Lovvorn, Director of Research, Agricultural Experiment Station, North Carolina State College.

Other questions the study will seek to answer are: (1) What is the minimum amount of nutrients a tree can have in its foilage without being limited in growth by "hunger"? (2) Is it possible to tell how much and what analysis fertilizer a tree needs by checking the nutrient level of soil and foliage? (3) Can you trigger a growth response by applying the fertilizer these tests indicate the tree needs?

Emphasis in the study will be on development of sound, scientific techniques of diagnosis.

The current study is on loblolly pine, one of the most important timber trees of the South and the nation. Sample trees have been selected from plantations on good sites, sites of medium quality, and very poor sites in the Piedmont and Coastal Plain Provinces of North Carolina.

Stem analyses are being made in each plantation to find the pattern of past growth in relation to age. From 50 trees on each site, foliage will be collected during the dormant season and analyzed for nutrient content, specifically, for nitrogen, phosphorus, potash, calcium, and magnesium.

Simultaneously, soil samples will be analyzed to determine the total and available levels in the soil on the different sites. The resulting data will be correlated with the growth rate of the trees in an attempt to determine what nutrient factors appear to have the greatest influence on the growth of loblolly pine.

Subsequently, sample trees will be fertilized with different amounts of nitrogen, phosphorus, and potash, with and without lime, to determine the response of loblolly pine to these elements on the different qualities of site.

The study is believed to be the first of its kind to attempt diagnosing of the nutrient requirements of loblolly pine in a comprehensive way. The field work is being conducted by Emmett Thompson, a graduate of Oklahoma A & M College, who is now studying for the Master of Science degree at the School of Forestry, North Carolina State College.

Project leader for the Study is Dr. T. E. Maki, head of the college's Department of Forest Management. Dr. Harvey J. Stangel, chief agronomist of the Nitrogen Division, Allied Chemical Corporation; Dr. Ralph McCracken, of the Soils Department, North Carolina State College; and Dr. David Mason, of the Department of Experimental Statistics, are serving as advisers for the project.

Dr. Maki, one of the country's leading authorities on forest tree nutrition, views the study as a possible break-through from experimental plot to commercial tree growing.

"We have shown through numerous experiments," Dr. Maki said, "that fertilizer will increase tree growth. Now we hope to determine how this knowledge can be put to practical use, exactly when, where and how a commercial tree grower should use fertilizers to realize the highest possible profit from his forest "land."

* * *

The use of fertilizers—both in tree nurseries and in seed orchards to increase seed production — has been pretty generally accepted. The big question has been with its use in forest stands to increase wood production. Even here, the question isn't "will fertilizer increase tree growth?" but, "will the use of fertilizer in forest stands prove economically sound?"

In tests conducted by the U. S. Forest Service at Alapaha, Ga., a combination of fertilization and cultivation are giving some startling increases in growth of slash pine on old abandoned crop land. The practice of cultivation alone has increased the first year's growth by 100 per cent.

Trees in an adjoining field, planted in the rough in 1954 at the same spacing, are same height as the cultivated trees in their second growing season. The addition of a suitable rate of fertilizer to trees in the cultivated plots will increase this first year's growth 35 per cent more.

The most definite response to fertilizer seems to be from potash. Used alone, potash has resulted in an increase of 25 percent in growth the first year. Strangely enough, in these tests nitrogen used alone actually stunted growth of seedlings. Best results were from a combined fertilizer at the rate of 100 pounds of nitrogen, 50 pounds of potash and 50 pounds of potassium per acre.

* * *

In a test plot at Fernandina Beach, Fla., Rayonier Incorporated tested the effect of planting, and turning under, a crop of peas prior to planting pines on prepared land. First the land was prepared by bulldozer, undercut, and windrowed. Half the land was left fallow, while the other half was planted to peas. Both plantings have been cultivated between rows with a light farm har-

This picture was taken 14 growing seasons after the red pine on the right received 200 pounds of potash per acre, while the pine on the left went unfertilized. The white bands show height at time of treatment.

row. In the third growing season, the trees preceded by peas show a significant increase in height growth over the adjoining stand.

* * *

Fertilizer has a definite place in forest land management in the Pacific Northwest, according to an article in "Plant Food Review," by S. P. Gessel and R. B. Walker, associate professors at the University of Washington.

The authors report that the use of 100 pounds of nitrogen an acre on poor, burned-over Douglas fir sites has just about tripled height growth on several sets of field plots.

On the Cathlamet Tree Farm in Oregon, 960 trees showed a 43 per cent increase in tree growth and a 54 per cent increase in the number of healthy trees when slowly soluble urea-formaldehyde and superphosphate pellets were dropped into the hole with the seedling at the time of planting.

The researchers also found that on plots fertilized initially in 1950 with nitrogen, phosphate and potash —and subsequently with nitrogen alone—the annual volume increase was 1.7 times that on unfertilized plots.

The authors mention other benefits of fertilizing as its use for promoting seed production and tree vigor, and for improving the color of Christmas trees. In the case of Christmas trees, they recommend that nitrogen be applied late in the season to avoid stimulating excessive leader growth.

They conclude that there definitely is a potential for the use of fertilizer in the forest industry. The exploratory work they have done so far has been very favorable.

* * *

Just a decade ago the suggestion of forest fertilization in many quarters would have aroused a stock answer: "Forests ordinarily don't need fertilizer, and even if they do, we can't afford it."

This attitude is reported by Earl L. Stone, forest soils scientist of Cornell University, who looks ahead at forest fertilization research as a new silvicultural tool in "Better Crops with Plant Food," published by the American Potash Institute.

Due to repeated demonstrations of substantial responses to fertilization by forest and other wildland vegetation, interest in forest fertilization research is growing. And, in Mr. Stone's opinion, the needs for information cover three subjects:

(1) The capabilities, or properties, of trees and other economic forest plants.

(2) The capabilities of forest land sites.

(3) The future development of forest land management.

He points out that forest nutrition investigations involve one or more of three procedures: (1) recognizing and characterizing fertility status, (2) modifying fertility status, and (3) studying the forest as a nutrient system.

"Forest nutrition studies are part of the scientific foundations for forestry and forest ecology and scarcely need further economic justification," Stone explains. "But forest fertilization is now suggested as a technique for increasing production per acre through greater yields, more effective management, or lower risks."

The usefulness and place of forest fertilization are only now being investigated, Stone reports. If its promise is fulfilled, economic considerations affecting its use should be similar to those governing other forestry practices.

Mr. Stone's full report is available through Forest Fertilization Handbook, News Service, American Potash Institute, 1102 16th Street, N.W., Washington, D. C.

Plant Enough Corn To Make Full Use of N

Kentucky's AES is the source of a suggestion that farmers plant corn thickly enough to use all the N. The normal Kentucky planting is 10,500 plants per acre and 100 pounds fertilization rate. In tests this produced 83 bushels. When at the same fertilization rate the planting was stepped up to 14,000 plants per acre the yield was increased to 95 bushels per acre, and at 21,000 the yield was 106.

Pushbutton Farming In the Offing

The University of California is predicting the day when the farmer can rock on his front porch, sipping lemonade, while he controls his motorized farm equipment with pushbuttons. Thus one man can operate several tractors, for example, at the same time.

NATIONAL CAL-MAG OXIDES
NOW IN TWO SCREEN SIZES
NATIONAL CAL-MAG OXIDES
80 LBS NET
QUICK LIME
DOLOMITE
THE NATIONAL LIME & STONE CO
FINDLAY OHIO
MgO 40.39 - CaO 58.07 - TNP 203.88
Superior for Dehydrating, Neutralizing, and Curing factors in the preparation of effective fertilizers.
PROMPT SHIPMENTS
Three railroads serve our Carey, Ohio, plant — assuring prompt delivery — everywhere.
WRITE FOR COMPLETE INFORMATION TODAY! Dept. CF
We Also Produce
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and
KILN DRIED RAW DOLOMITE (107 TNP)
Screened to size
The NATIONAL LIME and STONE CO.
General Offices • • • • • FINDLAY, OHIO

—of This and That . . . .

_____Daniel B. Brewster, Second District congressman, has been selected to receive the JAC Distinguished Service Award, this being the eighth time the honor has been made to men between 21 and 36 years of age who have made outstanding contributions to Baltimore. Representative Brewster is owner and operator of a model 500 acre farm near Glyndon in Baltimore County. He practices law in Baltimore County, and is part owner, counsel for and active in the management of Baugh Chemical & Fertilizer Company.

_____Wilson Meyer, president of Wilson & Geo. Meyer & Co., San Francisco, has been decorated by King Olav V of Norway with the Knight's Cross, First Class, of the Royal Order of St. Olav,—bestowed in recognition of his activities over many years in promoting friendly trade and cultural relations between Norway and the West Coast of the United States.

_____News item says that on the West Coast, Pacific Guano has a fertilizer radio commercial that goes "We put 50,000 seagulls out of work".

_____At Penn State's Fert. & Lime Conference Feb. 11-13, Roger Diaz of American Can Co., who was the banquet speaker, broke his arm and was unable to attend at the last minute. Dr. Reed of State substituted, in fact, came on the double in house slippers when they called him, then did such a good job he received standing applause from his enthusiastic audience.

_____Rush Willoughby, of Deerfield Beach, Fla., added the following postscript to a Feb. 19 letter to CF—"5½ years ago I sold my fertilizer plant through an ad in your magazine. Just one ad" . . . He sounded as proud as we are!

_____Vincent Sauchelli of NPFI calls the development of statistical quality control "an indispensable tool"—and says "the use of statistical techniques by progressive management, chemical engineers and all others responsible for making decisions is an achievement of our modern times" . . . "The agronomist working with variations of soil, plant varieties, nutrient levels and weather, the physicist making precise measurements; the control chemist involved with variations of size, shape, density, and moisture in samples and difference in glassware, balance readings and temperatures; the plant superintendent interested in efficient production, high quality and minimum unit cost of production;—all these use or could use statistical techniques". But, he says, "Let us face it; the fertilizer industry is not using this modern tool".

_____The January-February issue of North Dakota Farm Research gave 5 pages to fertilizer, pointed out that price indices for all farm costs were drastically up—except fertilizer, and advised that the current cost-price situation indicates the relatively lower cost for fertilizer can be advantageously utilized to boost farm profits.

_____The teacher asked the agronomy freshmen if they could define "nitrates". After a long pause one boy held up his hand and explained: "I'm not sure, but they're cheaper than day rates" . . .Oh, well.

_____Lyman Shaw of Illinois Farm Supply was getting a kick out of telling this story at the recent Middle West Industry-Agronomist meeting: It seems IFS mailed a package of 150 pieces of literature to one of their field men early in December. It still hadn't reached him by Christmas . . . but turned up Christmas morning under the tree. His wife, thinking it was a Christmas gift to him from the company, had placed it beneath some other parcels under the tree as a surprise for him to open on Christmas morning. Lyman says that he guesses it was a sort of surprise, at that.

Virginia-Carolina Chemical Corporation, Richmond, Virginia, is making extensive use of outdoor advertising to promote its regular line of "V-C" fertilizers and its special Harvest King Brand fertilizers for tobacco. Starting February and extending throughout March and April, postings cover a 10-state agricultural area, specifically Alabama, Georgia, Illinois, Indiana, Kentucky, Michigan, Missouri, North Carolina, Ohio, and Virginia. Albert Sidney Noble, Advertising, New York, handles the Virginia-Carolina Chemical Corporation account.

Commercial Solvents Corporation, New York, introduced its new poster promoting Hi-D, an ammonium nitrate fertilizer, at its Agricultural Chemicals Department sales convention, held in New Orleans recently. Shown against the poster backdrop, which occupied almost an entire wall of the hotel meeting room, are John N. Cronk, advertising manager of Commercial Solvents Corporation, and Clyde T. Marshall, general manager of the Agricultural Chemicals Department. The Hi-D outdoor program began in February in Southern and Mid-Western areas. Fuller & Smith & Ross, Inc., New York, is the agency.

Nitrogen Division, Allied Chemical Corporation, New York, is sponsoring, as in previous years, a heavy outdoor advertising program to promote its line of nitrogen fertilizers. The products, each bearing the Arcadian brand name, are A-N-L, a nitrogen fertilizer, and Uran, Feran and Nitrana, nitrogen solutions. The campaign will cover farming areas in 35 states. Outdoor Advertising Incorporated reports. Posting in the Lower Mississippi Valley and in the Southeast got under way in January. It starts in other areas just before Spring planting. All postings will be confined to the first six months of the year. Each one of the fertilizers will be advertised in its area of heaviest distribution. Albert Sidney Noble, Advertising, New York, is the agency.

STEDMAN
Fertilizer Plant EQUIPMENT

All Steel Self-Contained Fertilizer Mixing and Bagging Units
Complete Granulating Plants, Batch Mixers—Dry Batching—Pan Mixers—Wet Mixing

Tailings Pulverizers—Swing Hammer and Cage Type
Dust Weigh Hoppers
Vibrating Screens
Acid Weigh Scales
Belt Conveyors—Stationary and Shuttle Types
Batching Systems
Bucket Elevators
Hoppers and Chutes

125th Anniversary STEDMAN 1834 1959

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Subsidiary of United Engineering and Foundry Company
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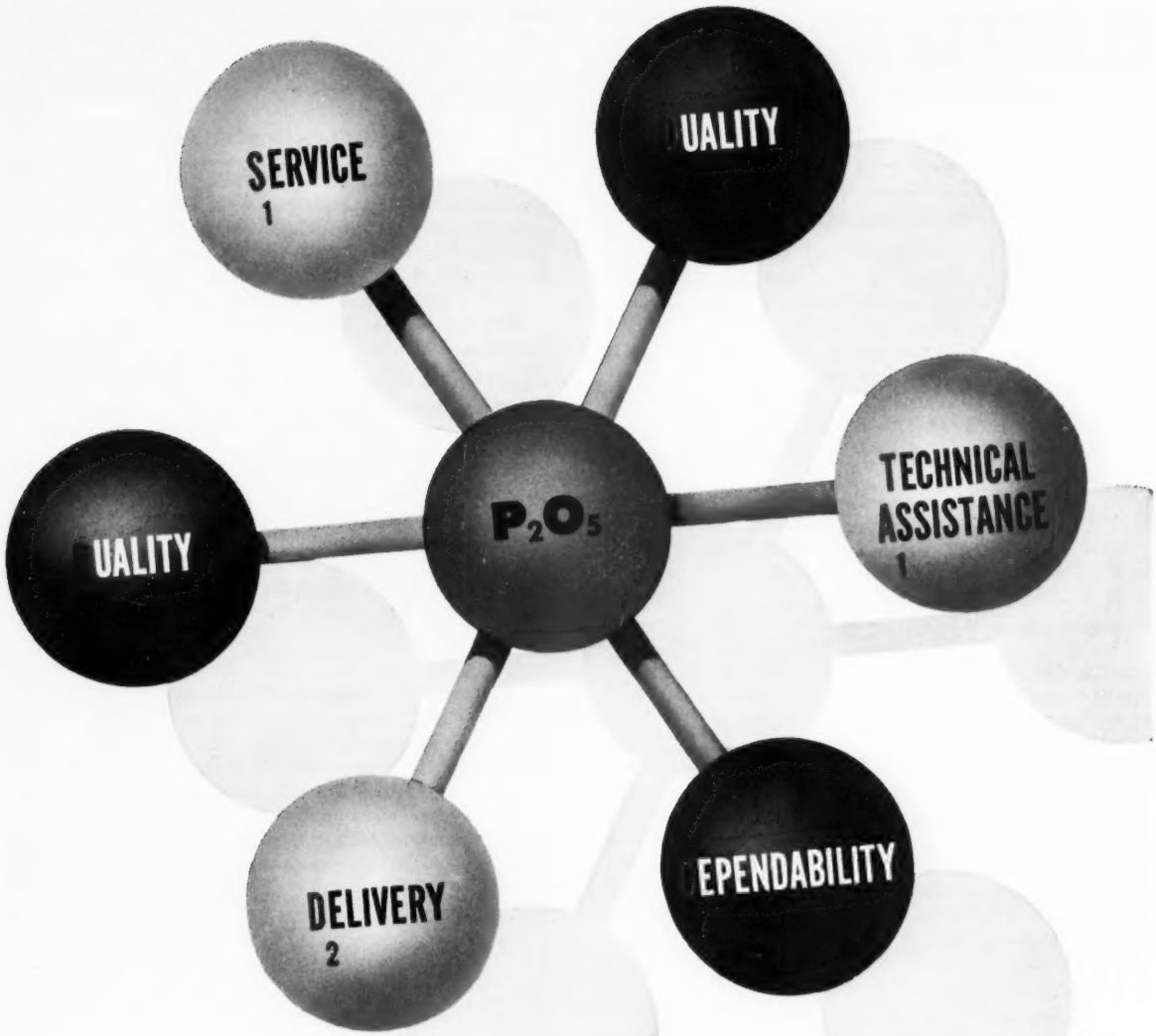

The DAVISON formula ($S_1Q_2D_2TA_1$) is more than just Quality of product

Make no mistake, we do not underrate the importance of quality. We know that the Davison Hi-Flo Triple Supers (Run-O-Pile, Gran-U-Lated and Blend-Phos); Davison Normal Supers; Phosphate Rock and Phosphoric Acid are unexcelled by any on the market.

But Davison considers that the important "pluses" . . . Service, Quality, Dependability, Delivery, Technical Assistance are equally important in determining a source for your needs. We consider them all parts of our product.

Hi-Flo Run-O-Pile Triple Superphosphate . . . *46/47% available P_2O_5.*

Hi-Flo Gran-U-Lated Triple Superphosphate . . . *guaranteed 46% available P_2O_5.*

Hi-Flo Blend-Phos Triple Superphosphate . . . *45/46% available P_2O_5.*

Granulated Normal Superphosphate . . . *guaranteed 20% available P_2O_5.*

Run-of-pile Normal Superphosphate . . . *Approx. 20% available P_2O_5.*

Phosphate Rock *All Grades.*

Phosphoric Acid
75% H_3PO_4—54.5% available P_2O_5.

W.R. GRACE & CO.
DAVISON CHEMICAL DIVISION
BALTIMORE 3, MARYLAND

CLASSIFIED ADVERTISING

RATES: single issue, 8c per word; two issues, 12c per word; three issues, 15c per word: add 4c per word for each insertion beyond three issues. 'For Sale', 'Exchange' and 'Wanted' advertisements accepted for this column must be **paid in advance.**

HELP WANTED

AGRONOMIST

Opportunity in Fertilizer Sales Division for experienced Agronomist to conduct dealer, customer and sales agronomic program for Midwest area. Prefer agricultural graduate with experience as county agent, in farm management or with feed company plus ability to write and speak effectively. Competitive salary, transportation and expenses furnished plus usual company benefits. Send resume of education and experience to:

Employment Coordinator
Personnel Department
Virginia-Carolina Chemical Corp.
401 East Main Street
Richmond, Virginia

EXPERIENCED SALESMAN for agricultural sales North East territory. Send background resume with recent photograph to Box # 8, % Commercial Fertilizer, 75 - 3rd St., N. W. Atlanta 8, Georgia.

FERTILIZER SALES MANAGER—Established multi-plant fertilizer company, central states area, wishes to employ man 30 to 45 who has fertilizer sales experience for position of Plant Sales Manager. Send background resume with recent photograph. All information confidential. Box # 3, % Commercial Fertilizer, 75 - 3rd St., N. W. Atlanta 8, Georgia.

WANTED: Salesman to sell Fertilizer machinery and material handling equipment. Located in Atlanta. Must make layouts and prepare proposals. Excellent future for aggressive man. Box # 6, % Commercial Fertilizer, 75 - 3rd St., N. W. Atlanta 8, Georgia.

SITUATION WANTED

SITUATION WANTED: Fertilizer Plant Manager, 15 years experience in plant production. Also several years in granulation and sales supervision. Mechanically inclined. Available now. Box # 7, % Commercial Fertilizer, 75 - 3rd St., N. W. Atlanta 7, Ga.

EQUIPMENT WANTED

MACHINERY WANTED: Acidulating den, Sturtevant or otherwise, in better than average condition. Spring availability. Box # 5, % Commercial Fertilizer, 75-3rd St. N. W. Atlanta 8, Ga.

SHUEY & COMPANY, INC.

Specialty: Analysis of Fertilizer Materials and Phosphate Rock. Official Weigher and Sampler for the National Cottonseed Products Association at Savannah; also Official Chemist for National Cottonseed Products Association.

115 E. Bay Street, Savannah, Ga.

EQUIPMENT FOR SALE

FOR SALE: One Link Belt vibrating screen size 4 ft. by 8 ft. Serial U P 148. Equipped with 3 mesh screen. Driven with pulley and belt from main drive. Also 1 Atlas portable conveyor length 25 ft. Equipped with steel hopper and 18 inch rubber belt and 5 h.p. enclosed motor 220 vlts. Also several extra motors, starters and switch boxes. All for sale reasonable. Write or call Maybank Fertilizer Corp., Charleston, S. C.

PRINTING PRESS FOR BURLAP BAGS—Two color Schmutz Model 29-918—Good condition. Asking $350. Wm. B. Tilghman Co. Owner, Salisbury, Maryland.

FOR SALE—1 New Stedman Type BX 20 x 18 Hammermill equipped with 4 row rotor with ⅞" manganese hammers and complete with 220V reduced voltage type compensator. Mill direct connected to 20 HP, 1200 RPM, 220/440 Volt, 3 Phase, 60 Cycle Totally Enclosed Fan Cooled Motor. Mill and motor mounted on integral base. Box # 20, % Commercial Fertilizer, 75 - 3rd St., N. W. Atlanta 8, Georgia.

FOR SALE: One used Ransome 1-ton batch mixer, Serial No. 5-512, Mfgd. by Worthington Pump & Machinery Corp., priced at $3000.00 F.O.B. our factory North Charleston, S. C. Price includes one vibrating screen No. UP 148. Also one 30 h.p. General Electric squirrel cage motor 220 vlts. Also top and bottom clod breaker. Front and rear elevator chain and buckets. Top and bottom sprockets, pulleys, belts etc. All in splendid running condition, buyer to dis-assemble and load. Subject to prior sale. Call or write Maybank Fertilizer Corp., Charleston, S. C.

EQUIPMENT FOR SALE: 1 St. Regis Valve Bag Filling Machine Model 301 P B X Serial 6875, 5 inch Spout. Extras Include:—1 Feeder Belt; 1 V Type Bag Rest (80-100 lb.); 1 V Type Bag Rest (25-50 lb.); 1 Flat Bag Rest; 1 Safety Switch for Wheel Cover. Practically new. Box # 4, Commercial Fertilizer, 75 Third St., N. W. Atlanta 8, Georgia.

FOR SALE: 2-7'6" x 55' and 80" x 65' Rotary Dryers, 3 - Louisville 6" x 50' Rotary Steam Tube Dryers, also Mixers, Storage Tanks, Screens, Elevators. Send us your inquiries. BRILL EQUIPMENT COMPANY, 2401 Third Ave., New York 51, N. Y.

FOR SALE: Dewatering Presses, Davenport No. 1A, No. 2A, No. 3A, Louisville 8-roll 36". Heil Dryer 8-25, Aluminum Tanks 4,000 gal., 2,100 gal. Spiral Ribbon Mixers 200, 75 cu. ft. (8) Louisville Rotary Steam Tube Dryers, 6' x 50', 6' x 30', 6' x 25'. Screw conveyor, Trough Belt Conveyor, Bucket Elevator, Bins, etc. **Perry Equipment Corp.**, 1426 N. 6th St., Philadelphia 22, Pa.

Wiley & Company, Inc.

Analytical and Consulting Chemists

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BALTIMORE 2, MD.

INDEX TO ADVERTISERS

Abbe Engineering Company, Kent Mill Division
Abrasion & Corrosion Engineering Co. 71
Allied Chemical Corp., Nitrogen Div. Front Cover, 19-22
American Agricultural Chemical Company, The
American Cyanamid Co., Agricultural Div. 14
American Potash & Chemical Corporation
Ashcraft-Wilkinson Co. 8, 11, 46
Atlanta Utility Works 71

Bagpak Division International Paper Co.
Bemis Bro. Bag Co. 57
Blaw-Knox Company, Blaw Knox Equipment Division 53

Chase Bag Company 9
Commercial Solvents Corporation 54
Continental Gin Co., Industrial Div. 71

Davison Chemical Co., Div. W. R. Grace & Co. 69
Dorr-Oliver, Inc. 6
du Pont De Nemours & Co. (Inc.), E. I. 31
Duval Sulphur and Potash Co. 11

Elano Corporation 53
Escambia Chemical Corp. 8

Fertilizer Equipment Sales Corporation 71

Grand River Chemical Division, Deere & Company

Hudson Pulp & Paper Corp. 37

Industrial Marking Equipment Co., Inc.
International Minerals & Chemical Corporation
Phosphate Division 39-42
Phosphate Minerals Division 5, 49
Potash Division
International Paper Company, Bagpak Division

Kent Mill Division (Abbe Engineering Co.)
Kraft Bag Corporation Inside Front Cover

Law & Company 71
Lummus Company, The

Marietta Concrete Corp.
Monsanto Chemical Co., Inorganic Chemicals Division
McDermott Bros. Company
McIver & Son, Alex M. 60

National Lime and Stone Co., The 67

Phelps Dodge Refining Corporation 47
Phillips Chemical Company
Potash Company of America Inside Back Cover

Quaker Oats Company, The (Chemical Div.) 60

Raymond Bag Corporation 15
Renneburg & Sons Co., Edw.

Sackett and Sons Co., The A. J. 34, 35
St. Regis Paper Company Multiwall Bag Division 12, 13
Shuey & Co., Inc. 70
Sinclair Chemicals, Inc. 64
Smith-Rowland Company 3
Sohio Chemical Company 7
Southwest Potash Corporation 18
Spencer Chemical Co. 45
Stedman Foundry & Machine Company, Inc. 68
Sturtevant Mill Co. 10

Tennessee Corporation 53, 72
Texas Company, The Petrochemical Sales Division 61
Texas Gulf Sulphur Co.
Thomas Alabama Kaolin Company, The 33
Tull Metal & Supply Co., Inc., J. M. 46

Union Bag-Camp Paper Corporation 63
Union Special Machine Co. Back Cover
U. S. Industrial Chemicals Co., Division of National Distillers & Chemical Corporation
U. S. Phosphoric Products Division, Tennessee Corp. 28, 29
United States Potash Company, Div. United States Borax & Chemical Corp. 65

West Virginia Pulp & Paper Company
Wiley & Company, Inc. 70
Woodward & Dickerson, Inc.

Yancey & Company, Grady

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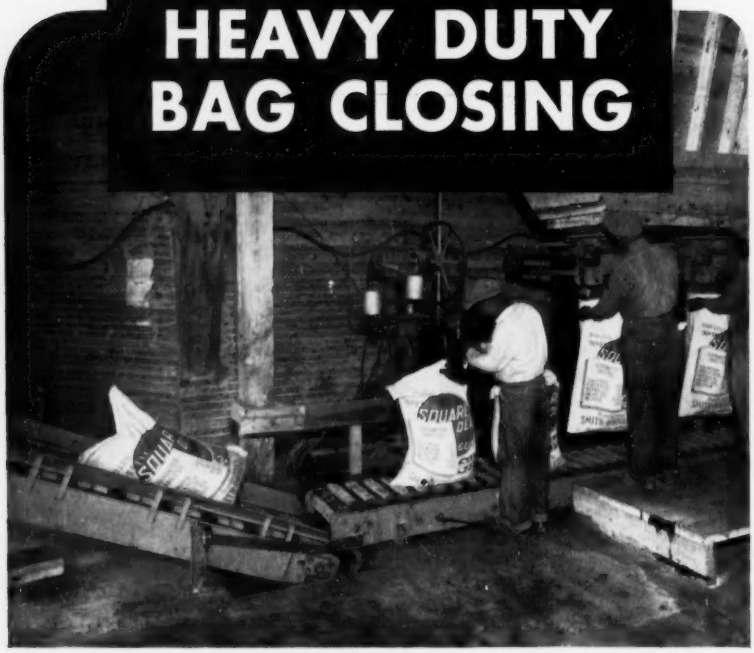

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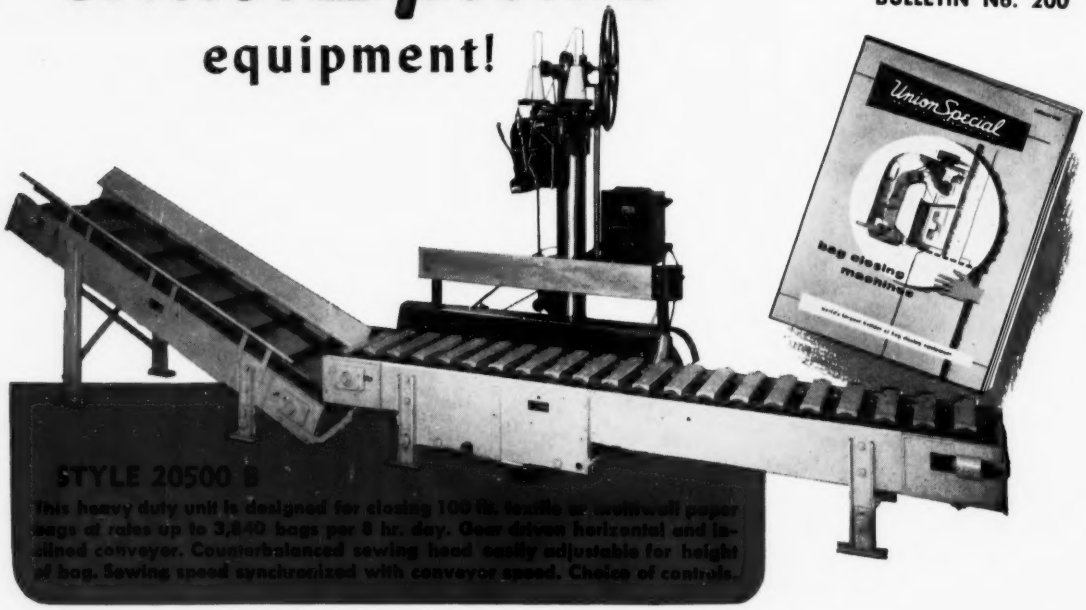

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